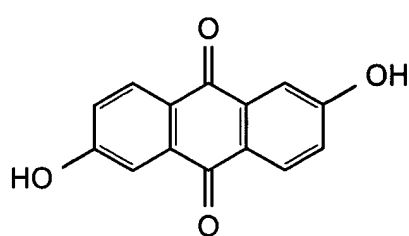
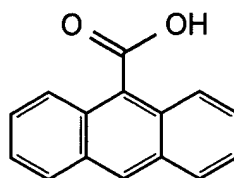


FIG. 1A



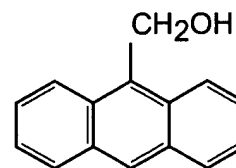
anthraflavic acid

1



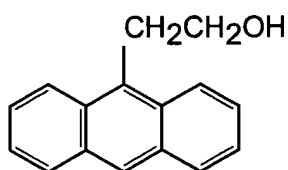
9-anthracene carboxylic acid

2



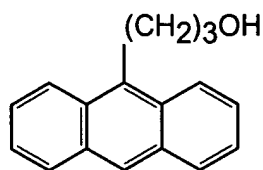
9-anthracene methanol

3



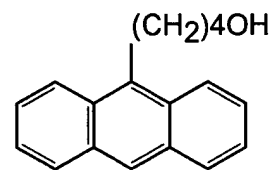
9-anthracene ethanol

4



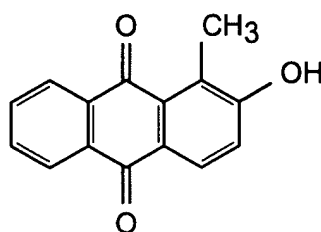
9-anthracene propanol

5



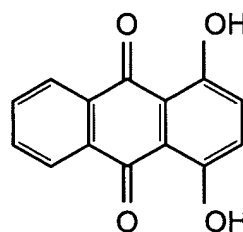
9-anthracene butanol

6



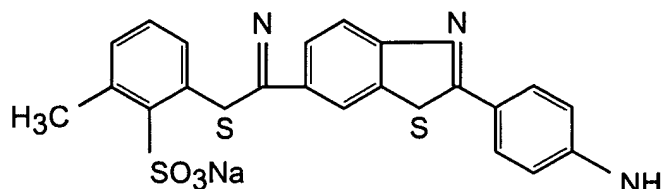
alizarin

7



quinizarin

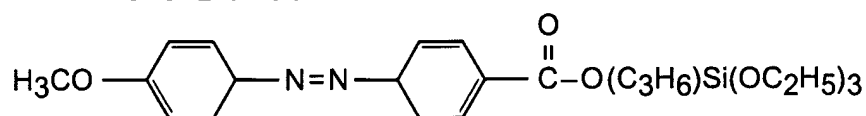
8



primuline

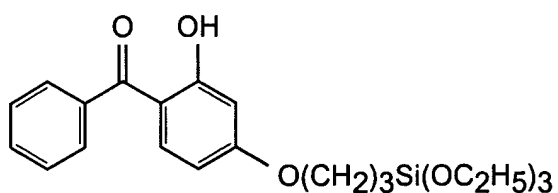
9

FIG. 1F

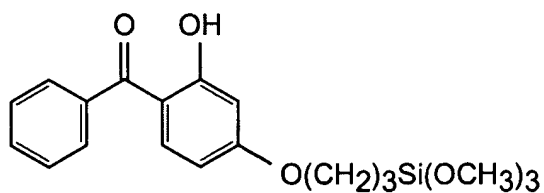


4-methoxyphenylazobenzene-4-carboxy
propyl triethoxysilane

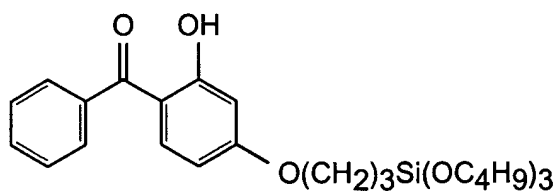
41

FIG. 1B

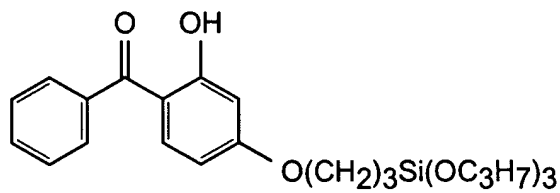
2-hydroxy-4-(3-triethoxysilylpropoxy)-
diphenylketone
10



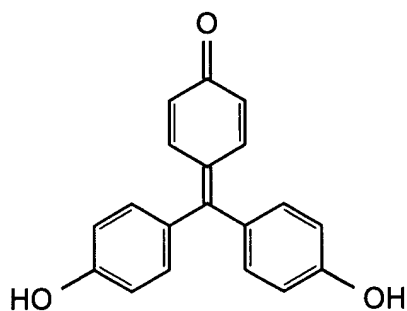
2-hydroxy-4-(3-trimethoxysilylpropoxy)-
diphenylketone
11



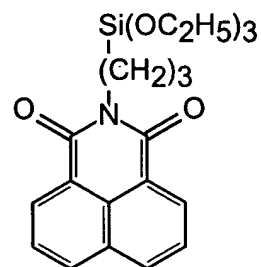
2-hydroxy-4-(3-tributoxysilylpropoxy)-
diphenylketone
12



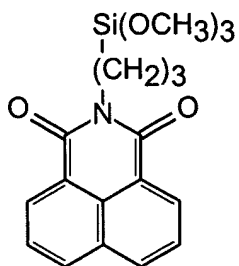
2-hydroxy-4-(3-tripropoxysilylpropoxy)-
diphenylketone
13



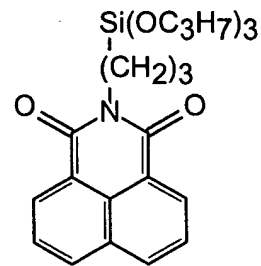
rosolic acid
14



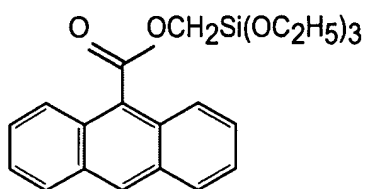
triethoxysilylpropyl-1,8-naphthalimide
15



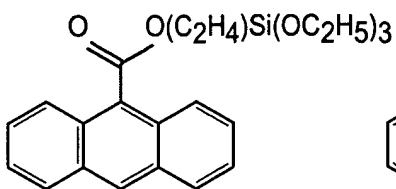
trimethoxysilylpropyl-1,8-naphthalimide
16



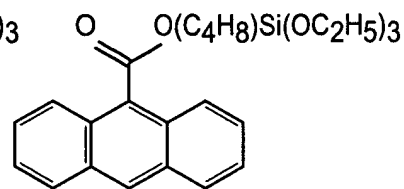
tripropoxysilylpropyl-1,8-naphthalimide
17

FIG. 1C

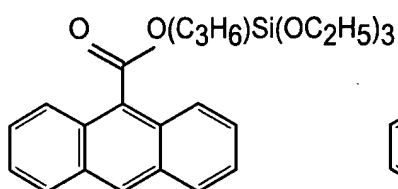
9-anthracene carboxy-methyl
triethoxysilane (TESAC)
18



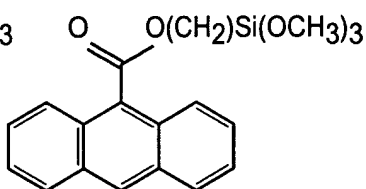
9-anthracene carboxy-ethyl
triethoxysilane
19



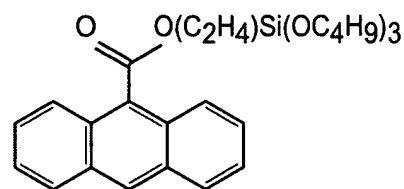
9-anthracene carboxy-butyl
triethoxysilane
20



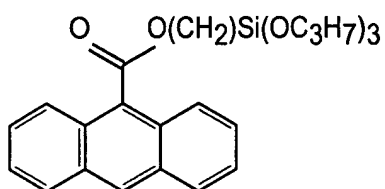
9-anthracene carboxy-propyl
triethoxysilane (TESAC)
21



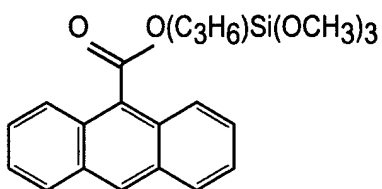
9-anthracene carboxy-methyl
trimethoxysilane
22



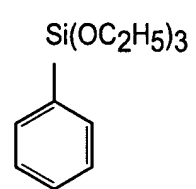
9-anthracene carboxy-ethyl
tributoxysilane
23



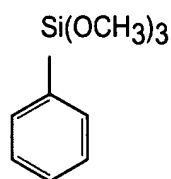
9-anthracene carboxy-methyl
tripropoxysilane
24



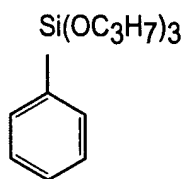
9-anthracene carboxy-methyl
trimethoxysilane
25



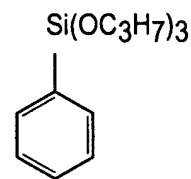
phenyltriethoxysilane
26



phenyltrimethoxysilane
27

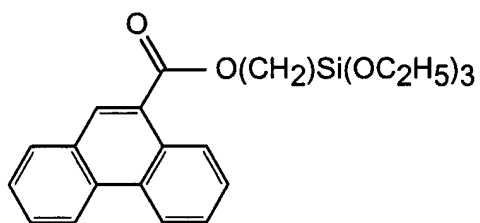


phenyltriethoxysilane
28

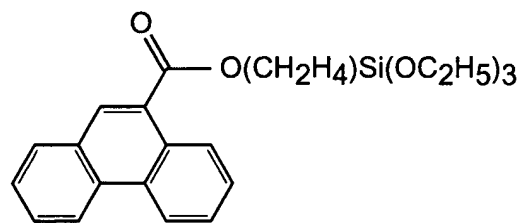


phenyltriethoxysilane
29

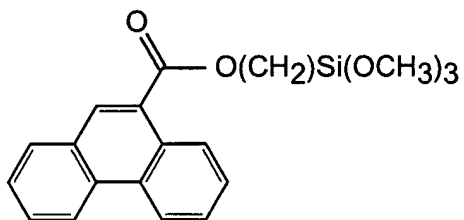
FIG. 1D



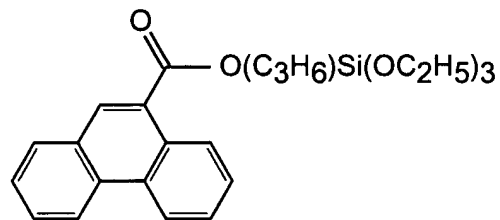
10-phenanthrene carboxy-methyl
triethoxysilane
29



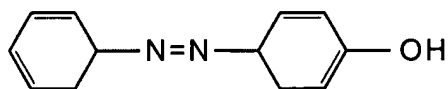
10-phenanthrene carboxy-ethyl
triethoxysilane
30



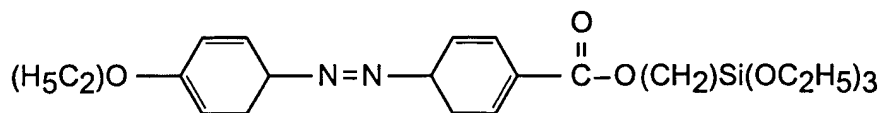
10-phenanthrene carboxy-methyl
trimethoxysilane
31



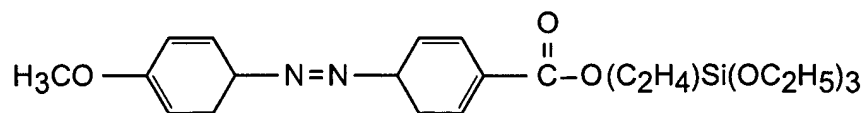
10-phenanthrene carboxy-propyl
triethoxysilane
32



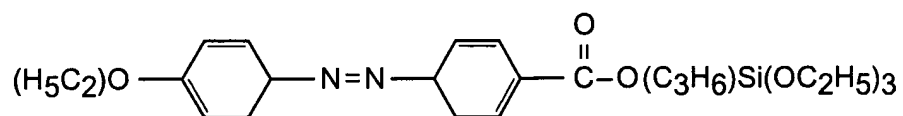
4-phenylazophenol
33



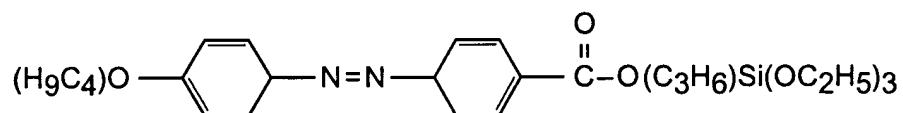
4-ethoxyphenylazobenzene-4-carboxy
methyl triethoxysilane
34



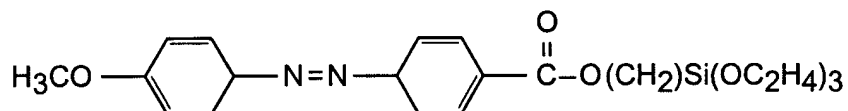
4-methoxyphenylazobenzene-4-carboxy
ethyl triethoxysilane
35

FIG. 1E

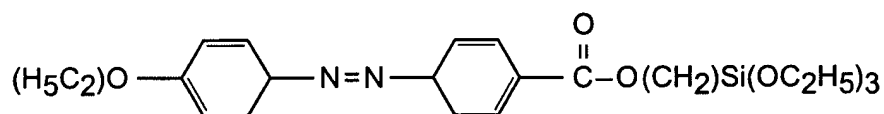
4-ethoxyphenylazobenzene-4-carboxy
propyl triethoxysilane
36



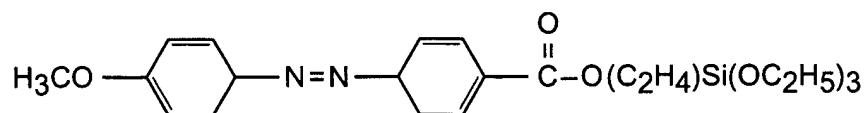
4butoxyphenylazobenzene-4-carboxy
propyl triethoxysilane
37



4-methoxyphenylazobenzene-4-carboxy
methyl triethoxysilane
38



4-ethoxyphenylazobenzene-4-carboxy
methyl triethoxysilane
39



4-methoxyphenylazobenzene-4-carboxy
ethyl triethoxysilane
40

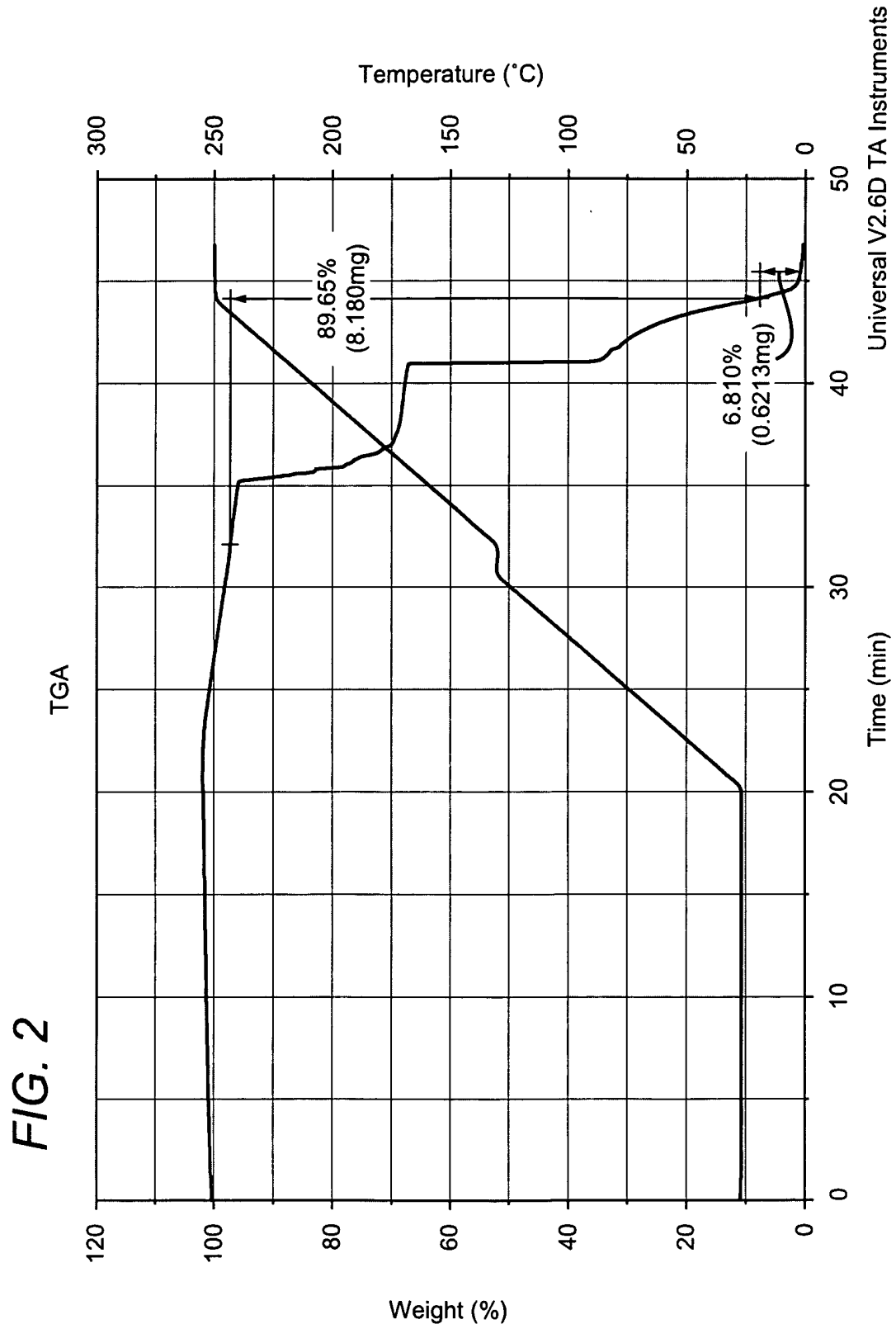
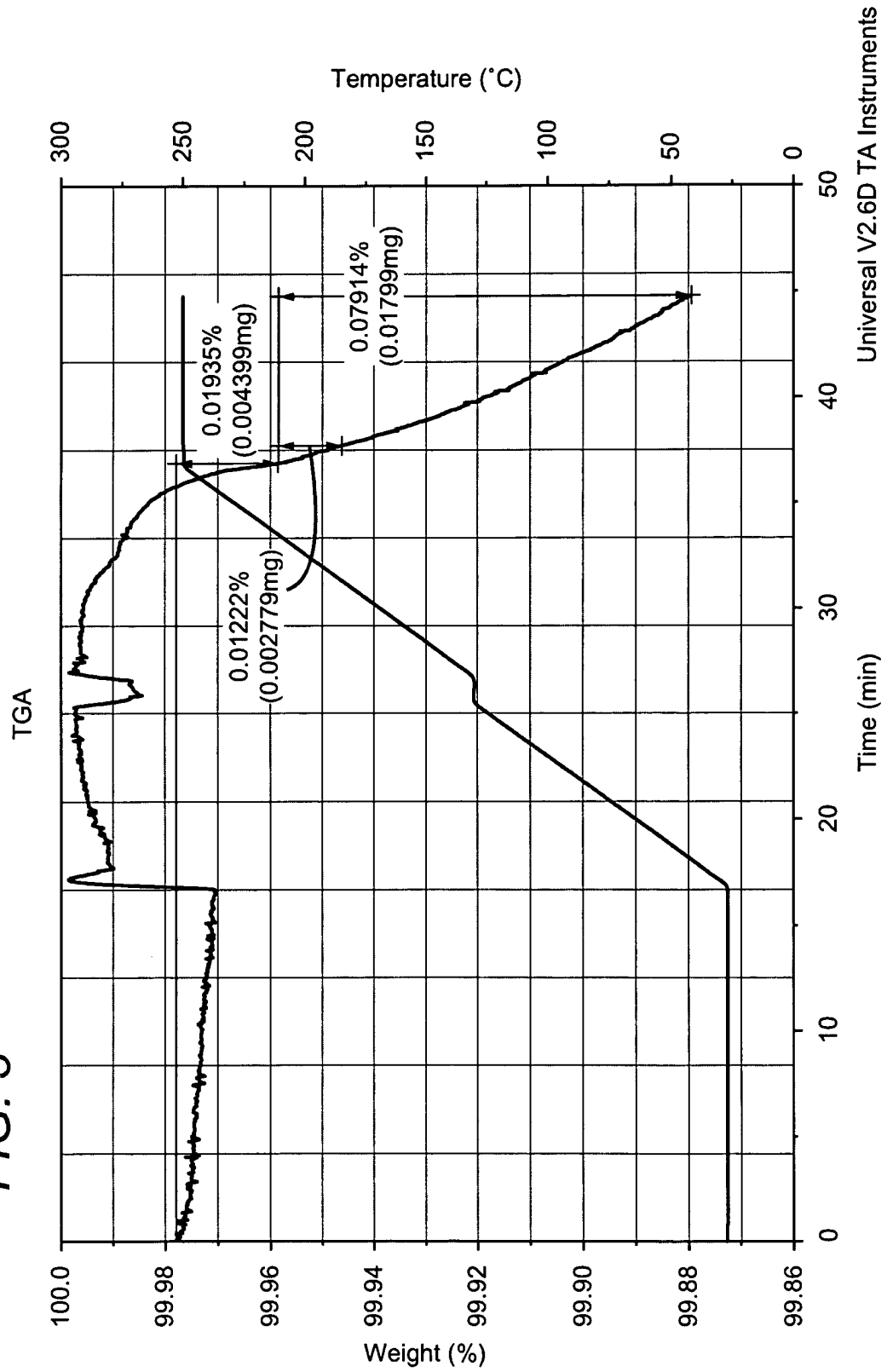


FIG. 3



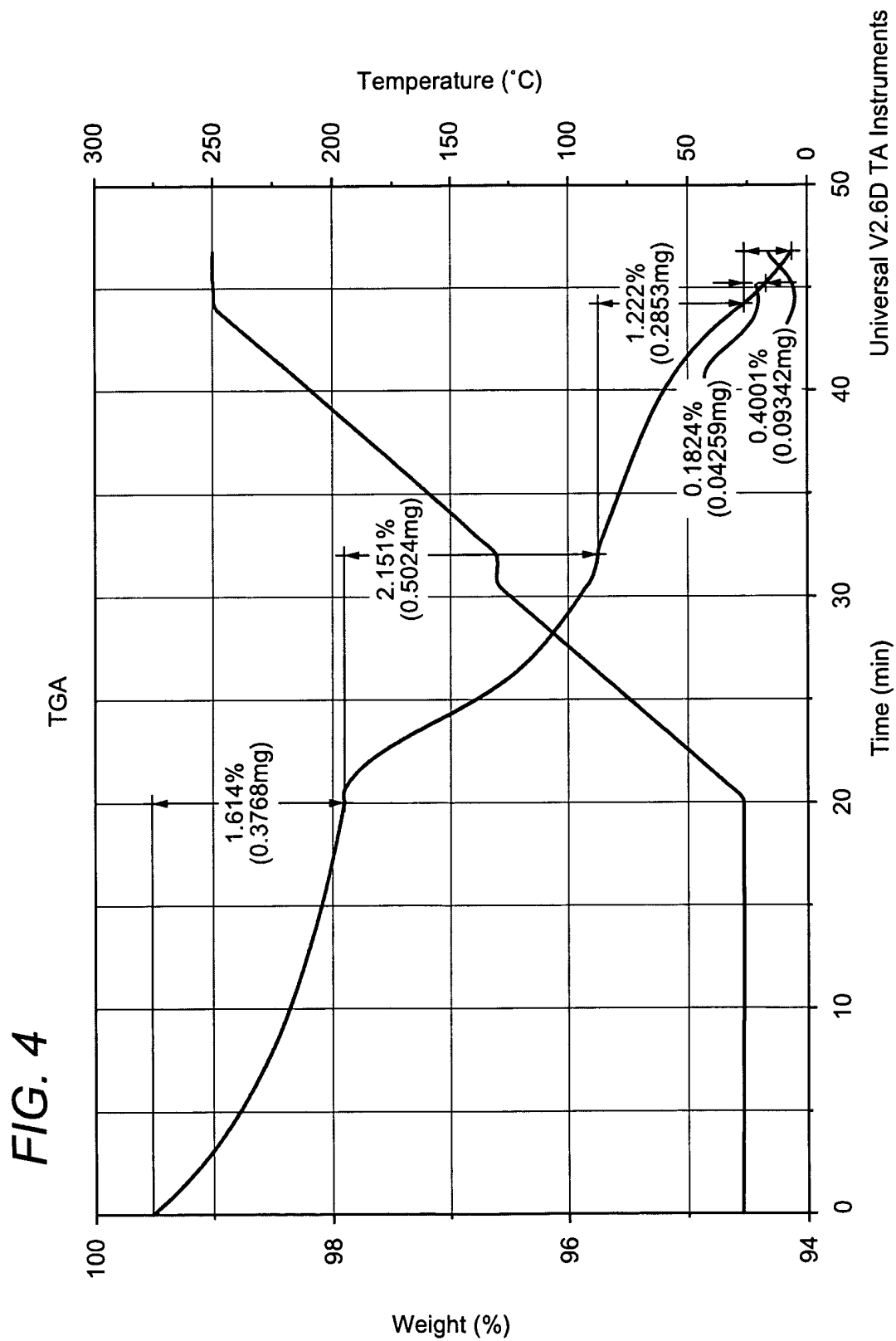


FIG. 5

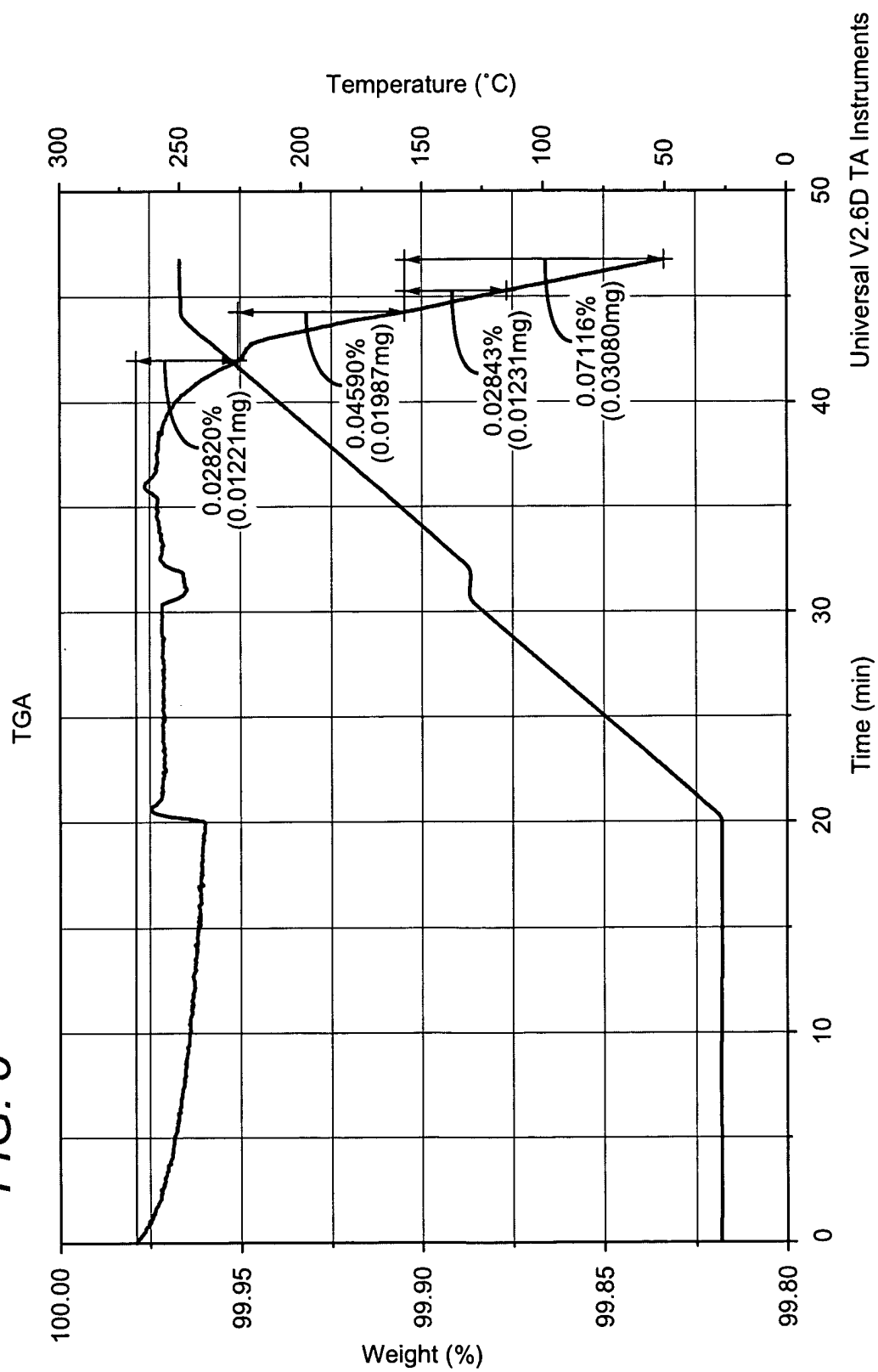
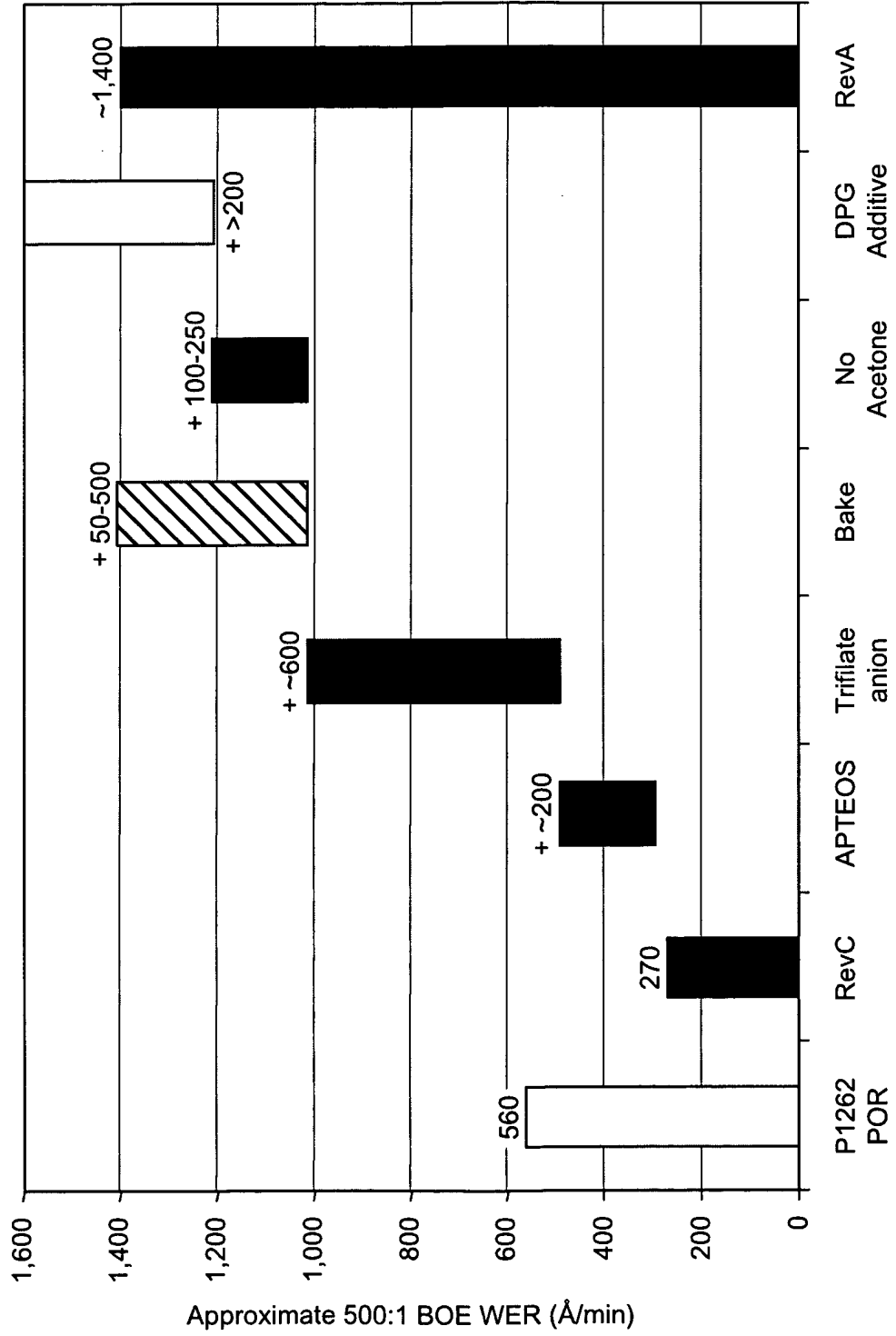


FIG. 6



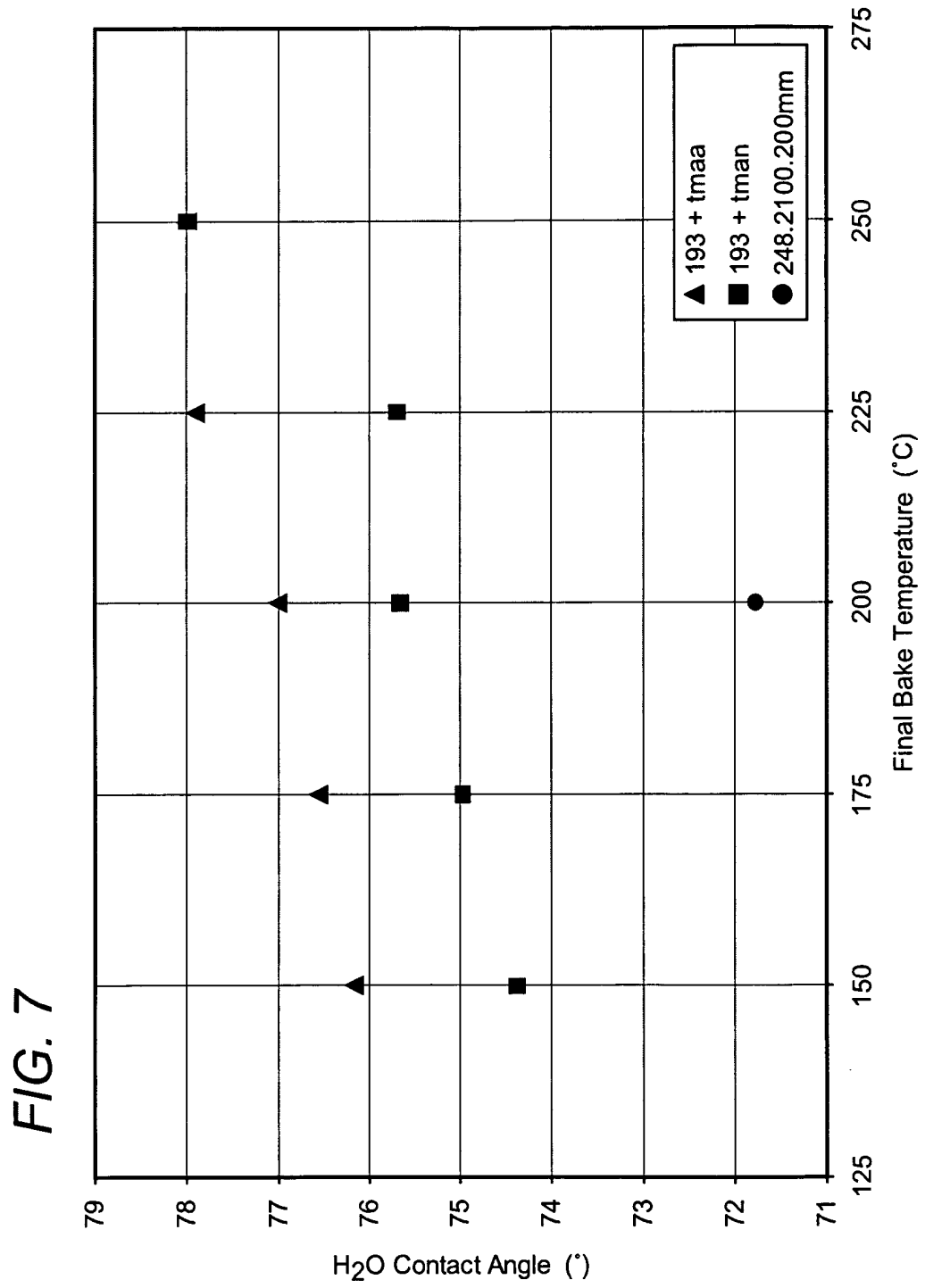
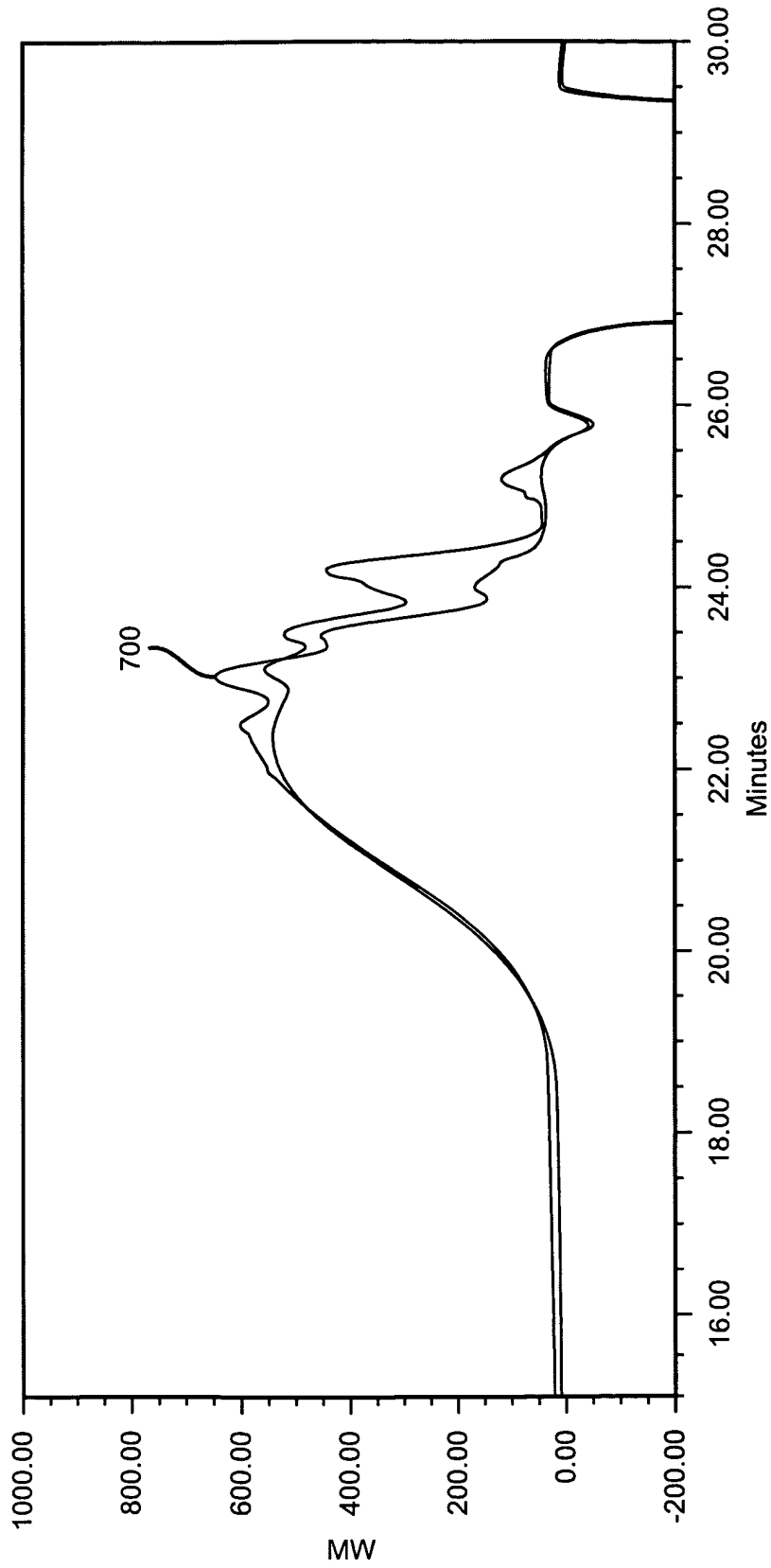
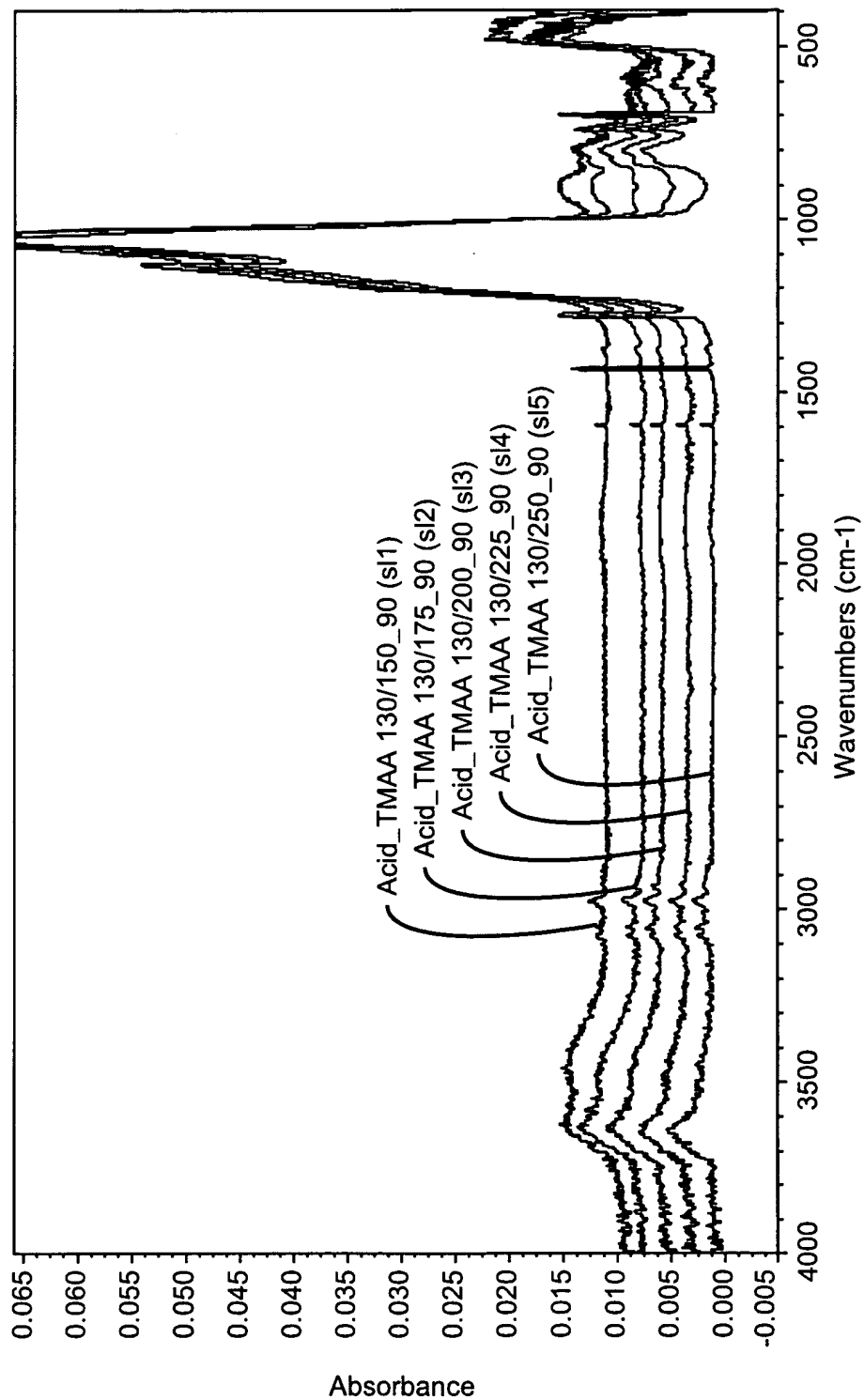


FIG. 8



Product	Mn	Mw	Mp	Mz	Mz+1	Polydispersity
193 + 600ppm Acidified TMAA	865	1183	737	1590	2012	1.367
w/ TMAA (after 5 days @ 40 C)	1021	1316	766	1671	2032	1.289
193 + 600ppm TMAN	789	1151	727	1582	1999	1.458
w/ TMAN (after 5 days @ 40 C)	848	1244	731	1706	2139	1.467

FIG. 9



- Although water clearly present at 130/150 C bake, the WER is still quite low. SiOH is clearly present at 925 cm⁻¹:

FIG. 10

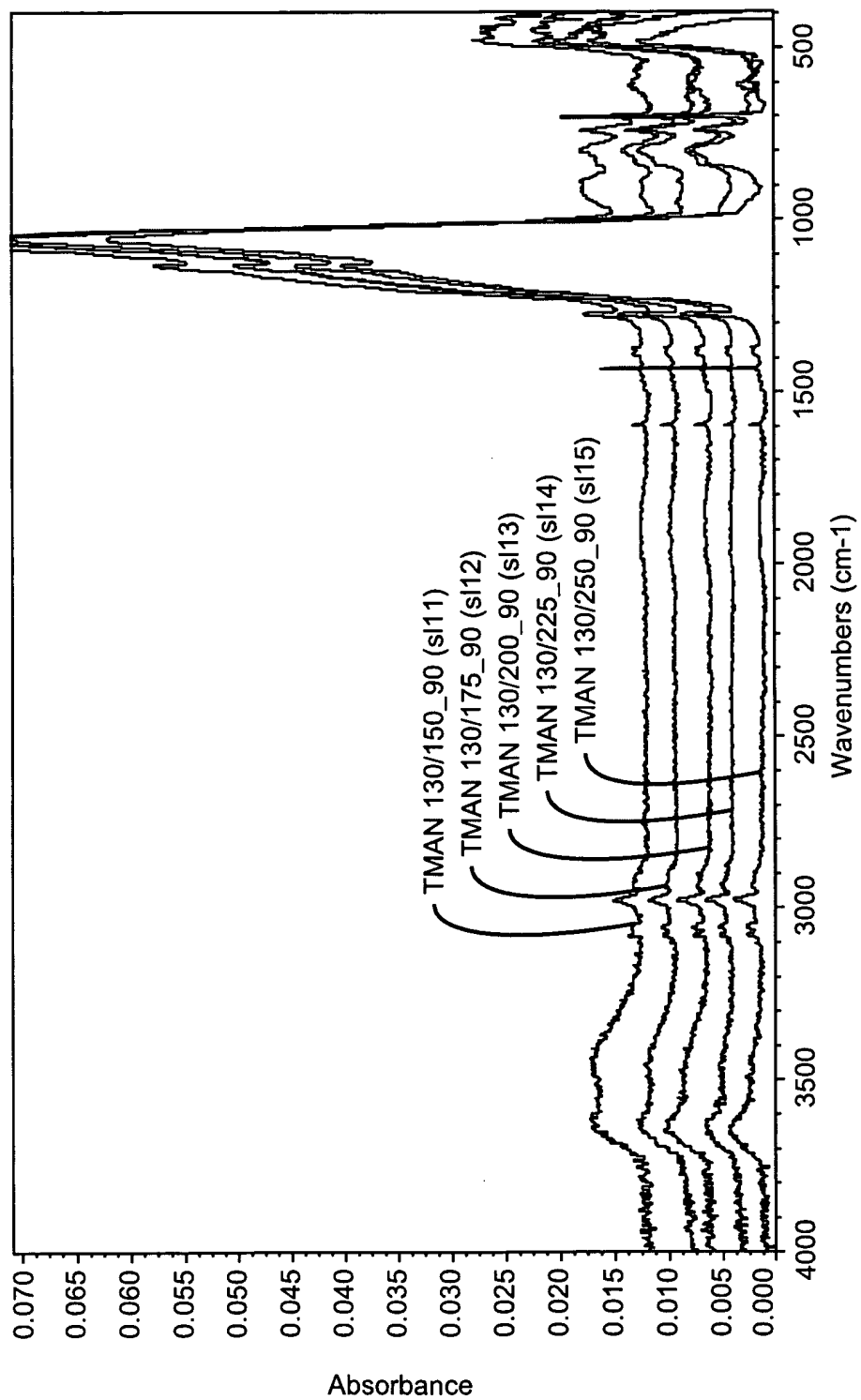


FIG. 11

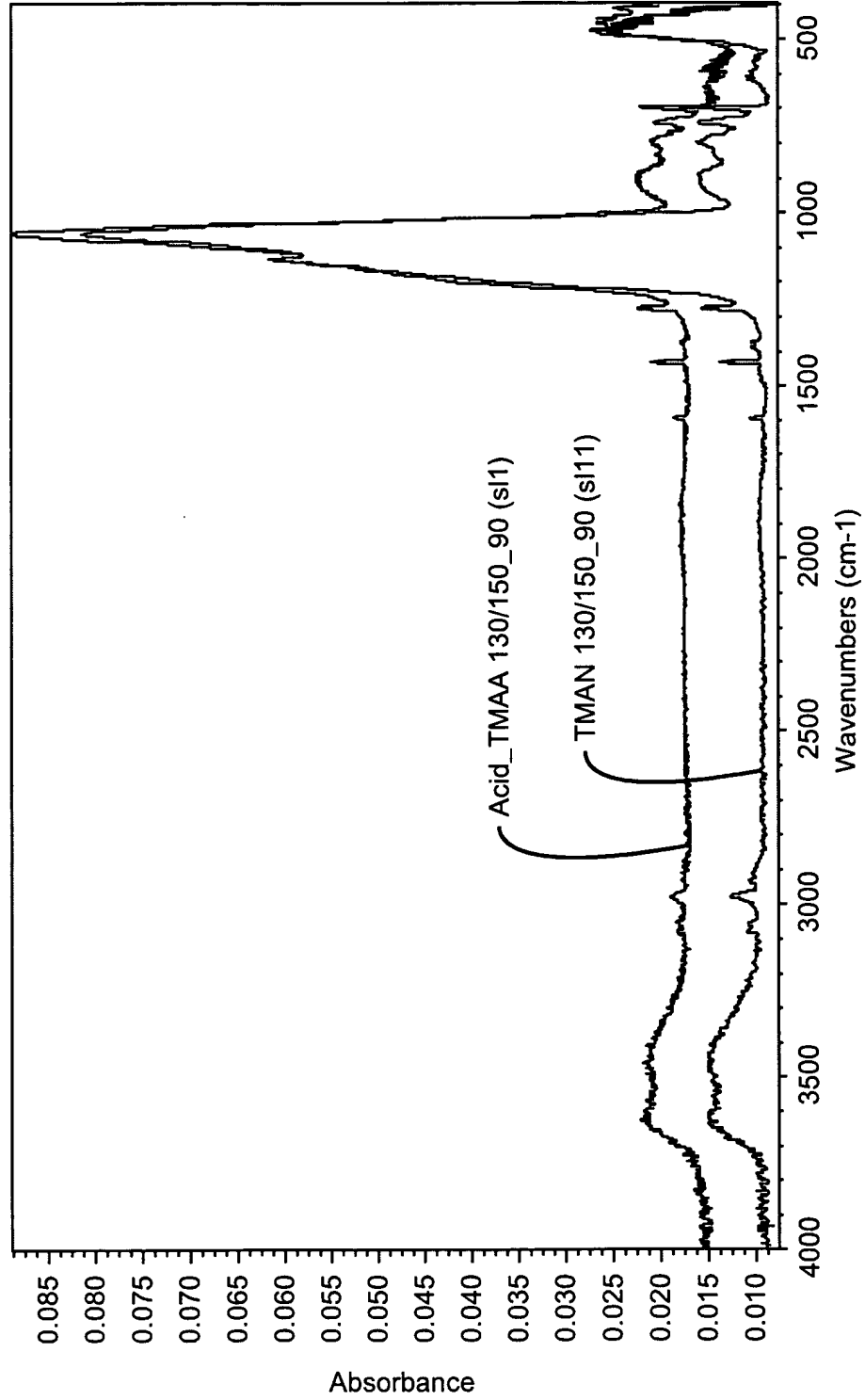


FIG. 12

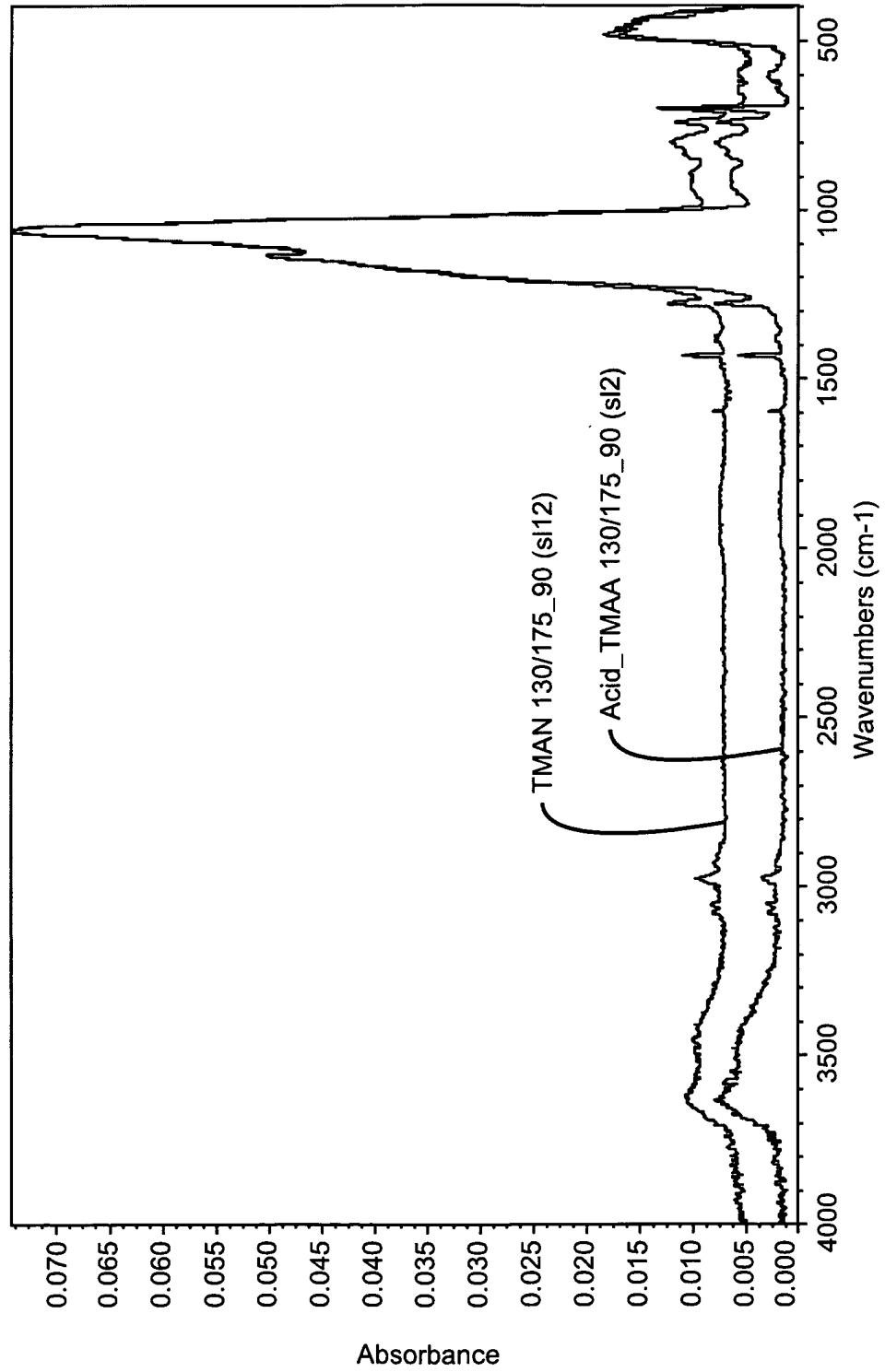


FIG. 13

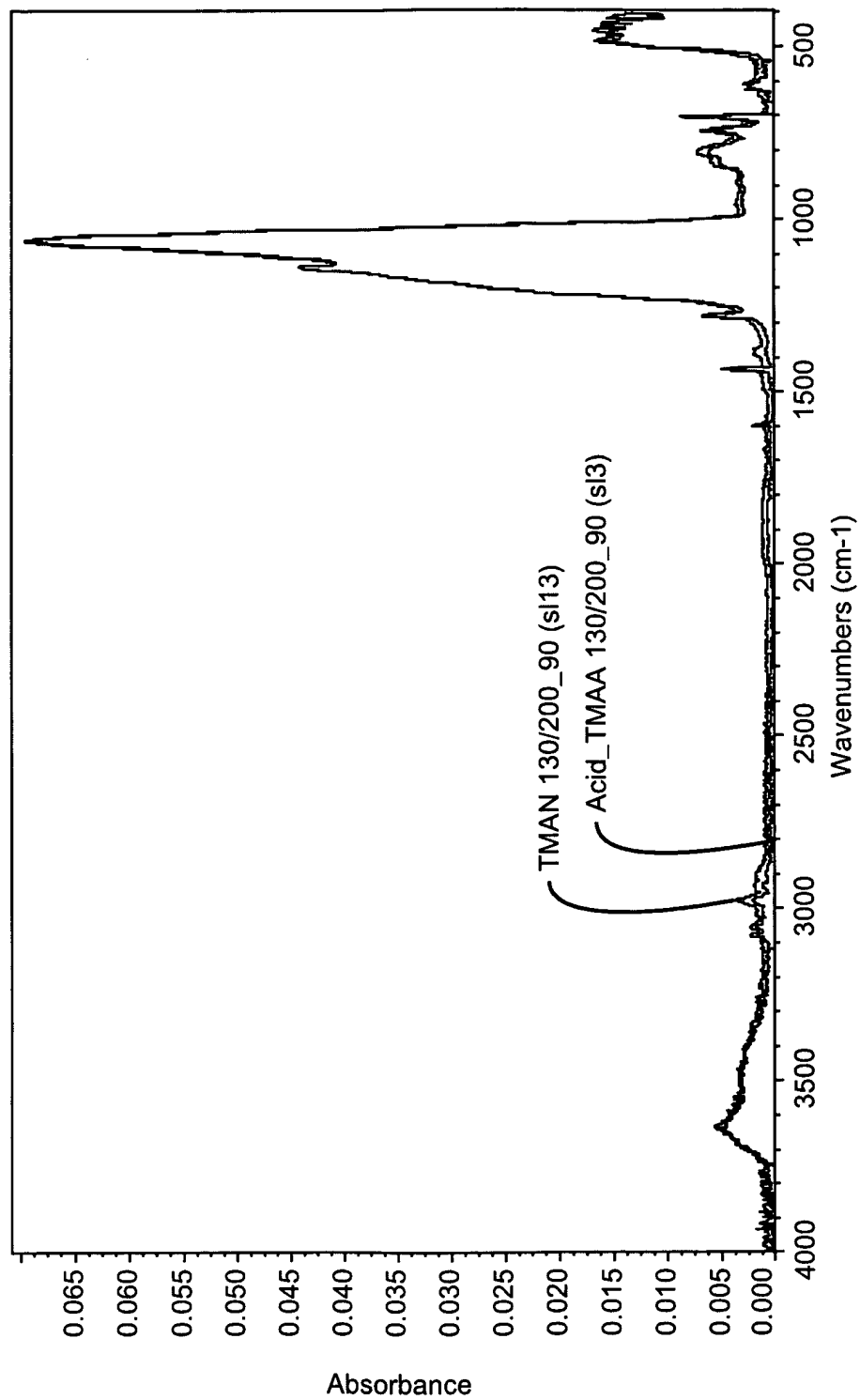


FIG. 14

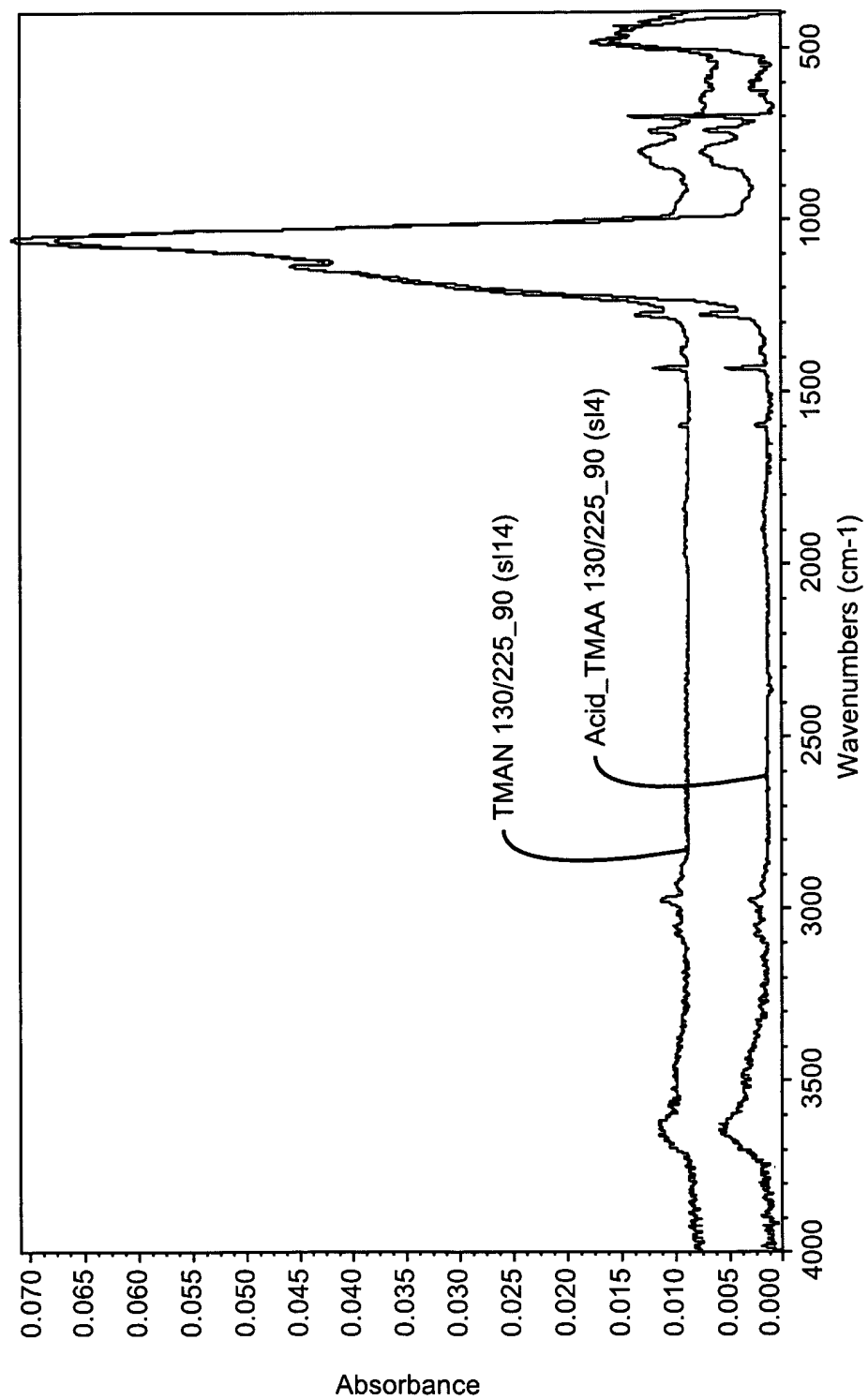


FIG. 15

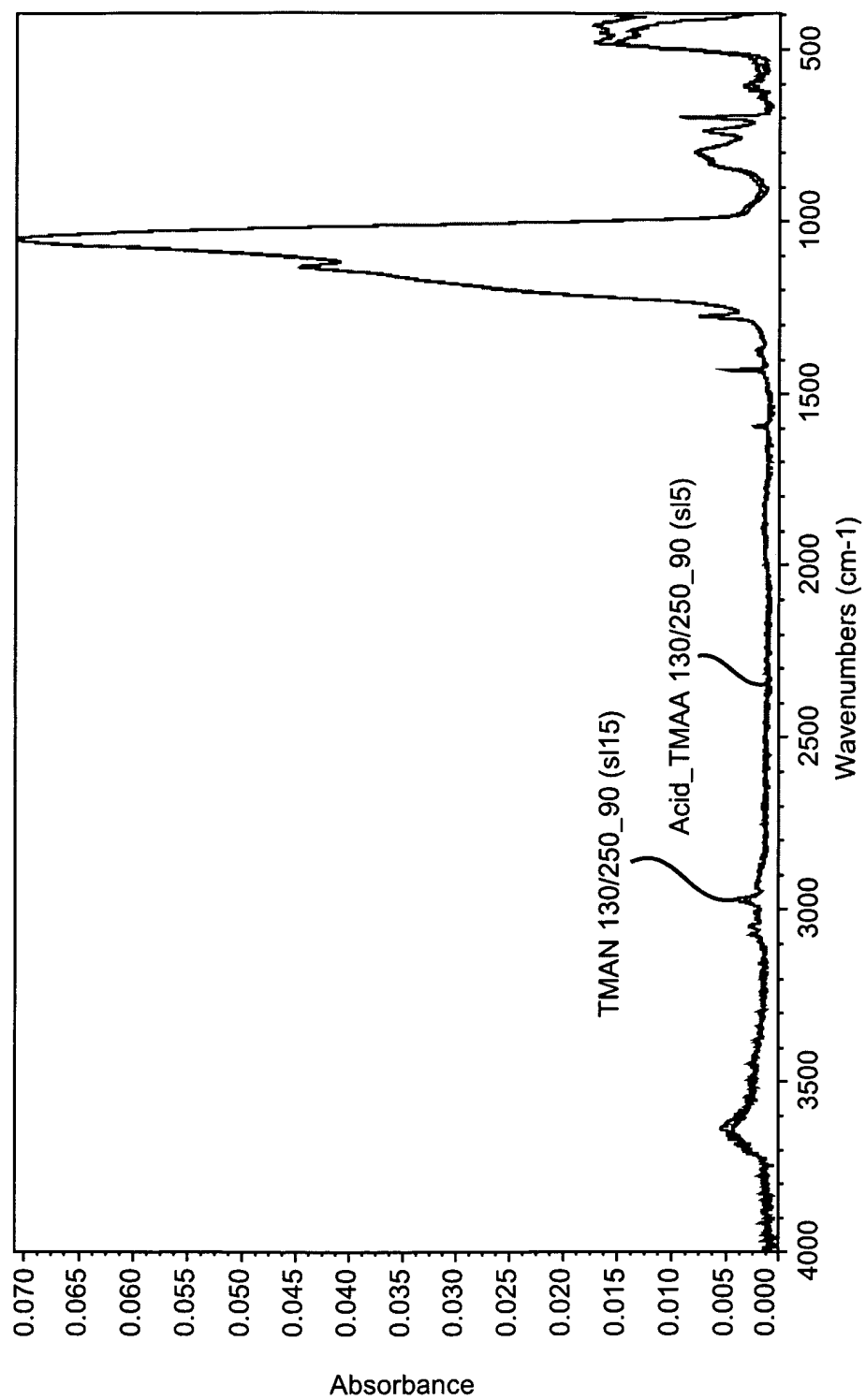


FIG. 16

193 Absorb. Composition Stabilized TMAA -vs- TMAN: Mw -vs- Aging

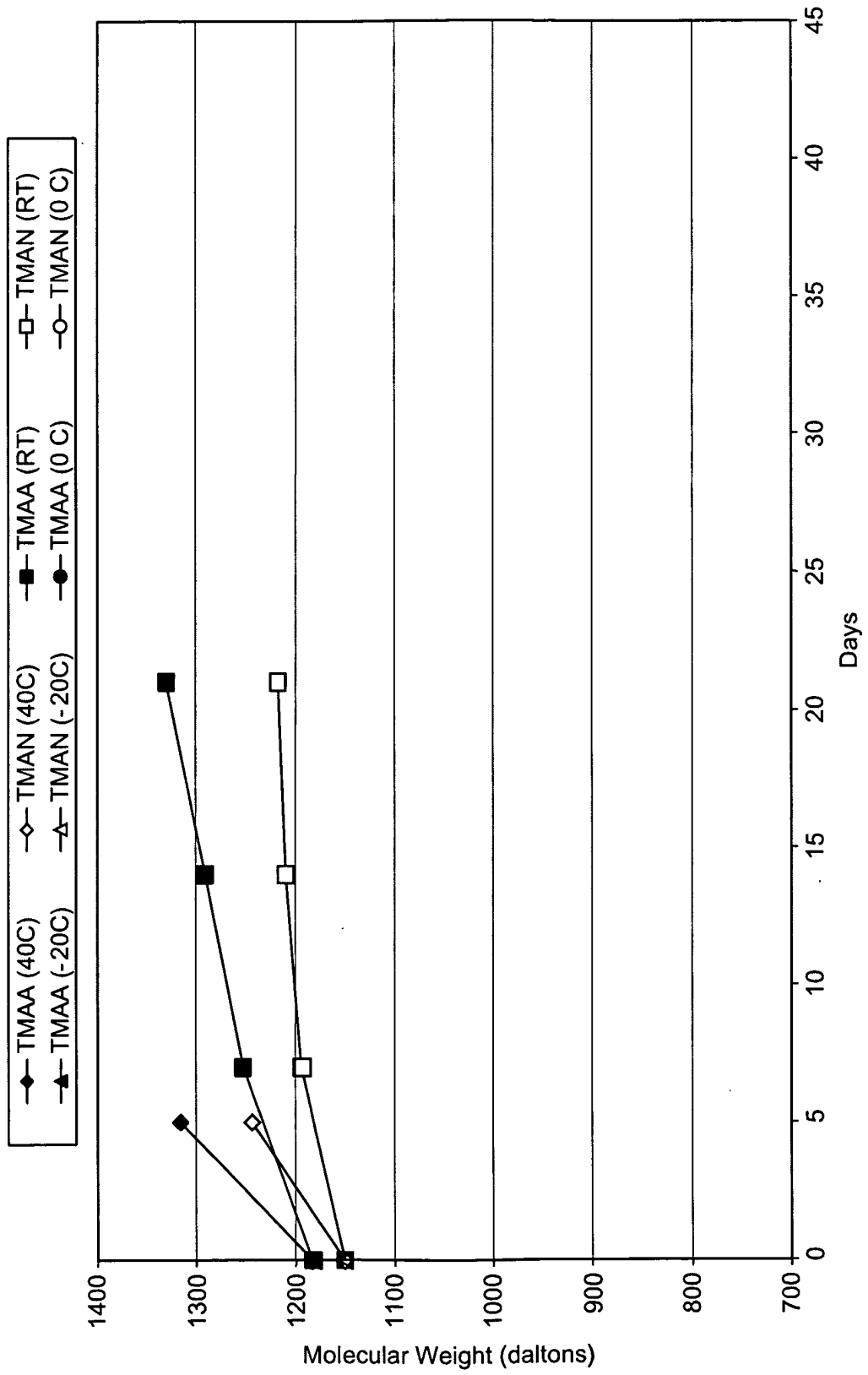


FIG. 17

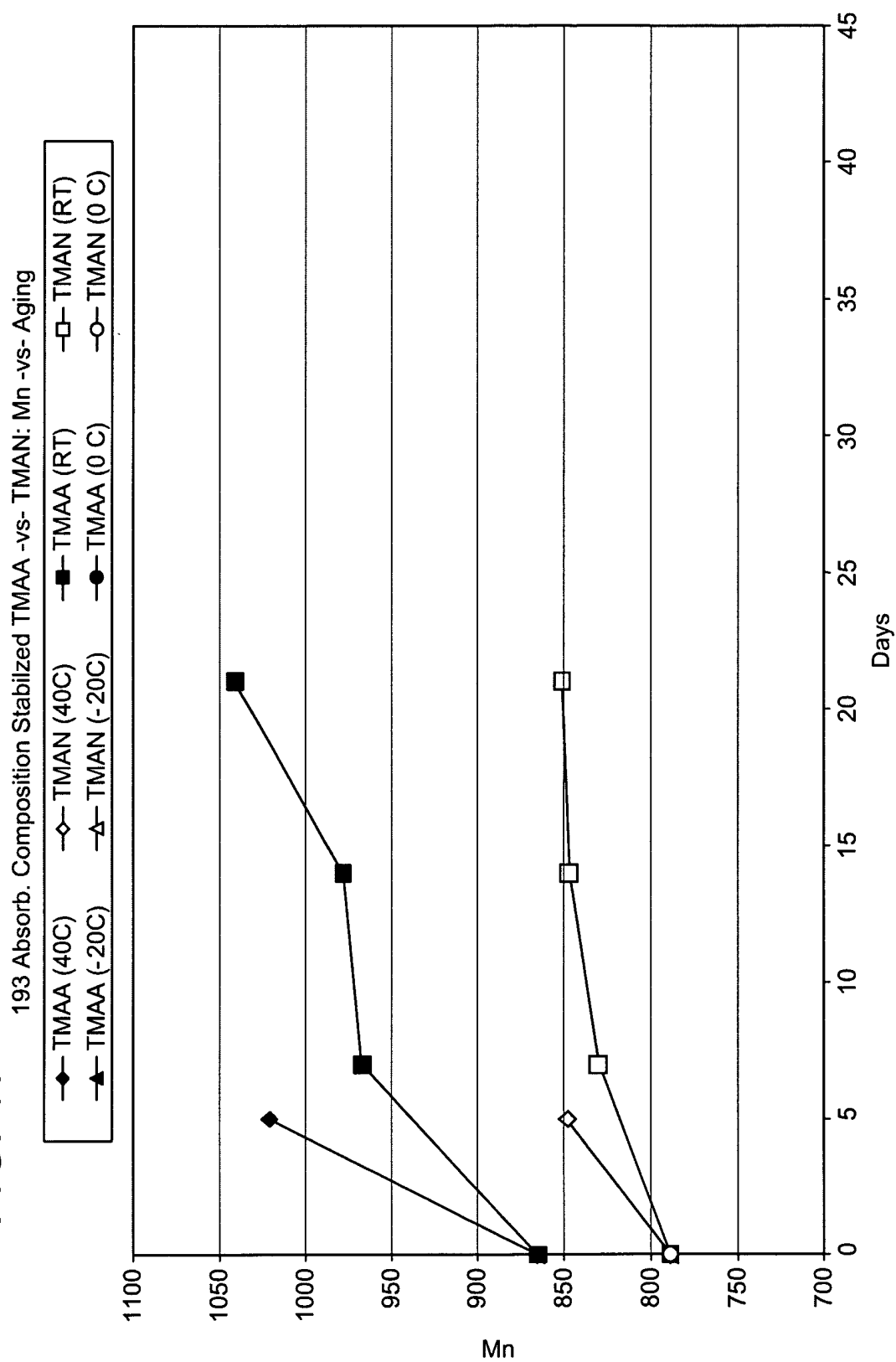


FIG. 18

193 Absorb. Composition Stabilized TMAA -vs- TMAN: Film Thickness -vs- Aging

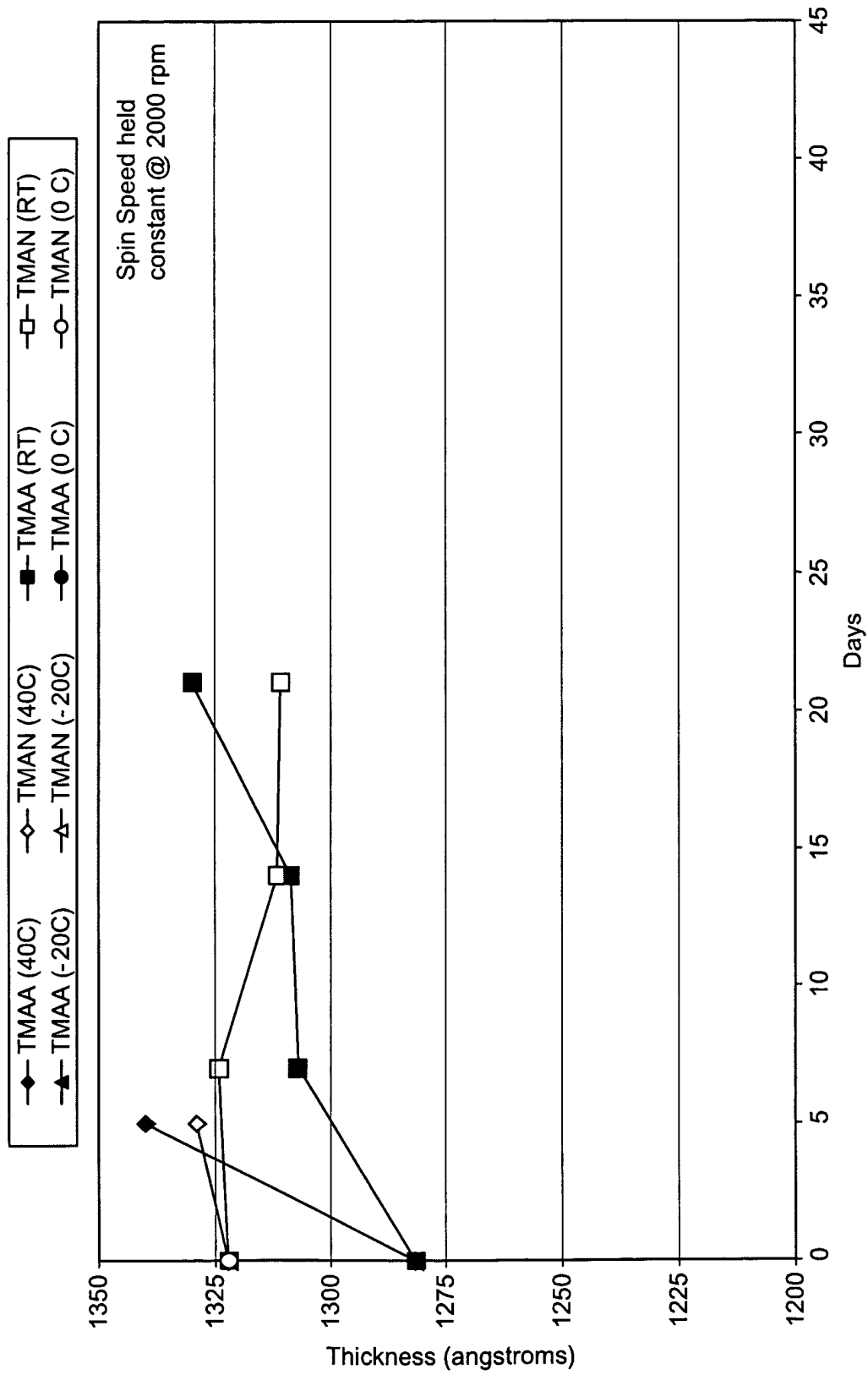


FIG. 19

193 Absorb. Composition Stabilized TMAA -vs- TMAN: Reflectance @ 193nm -vs- Aging

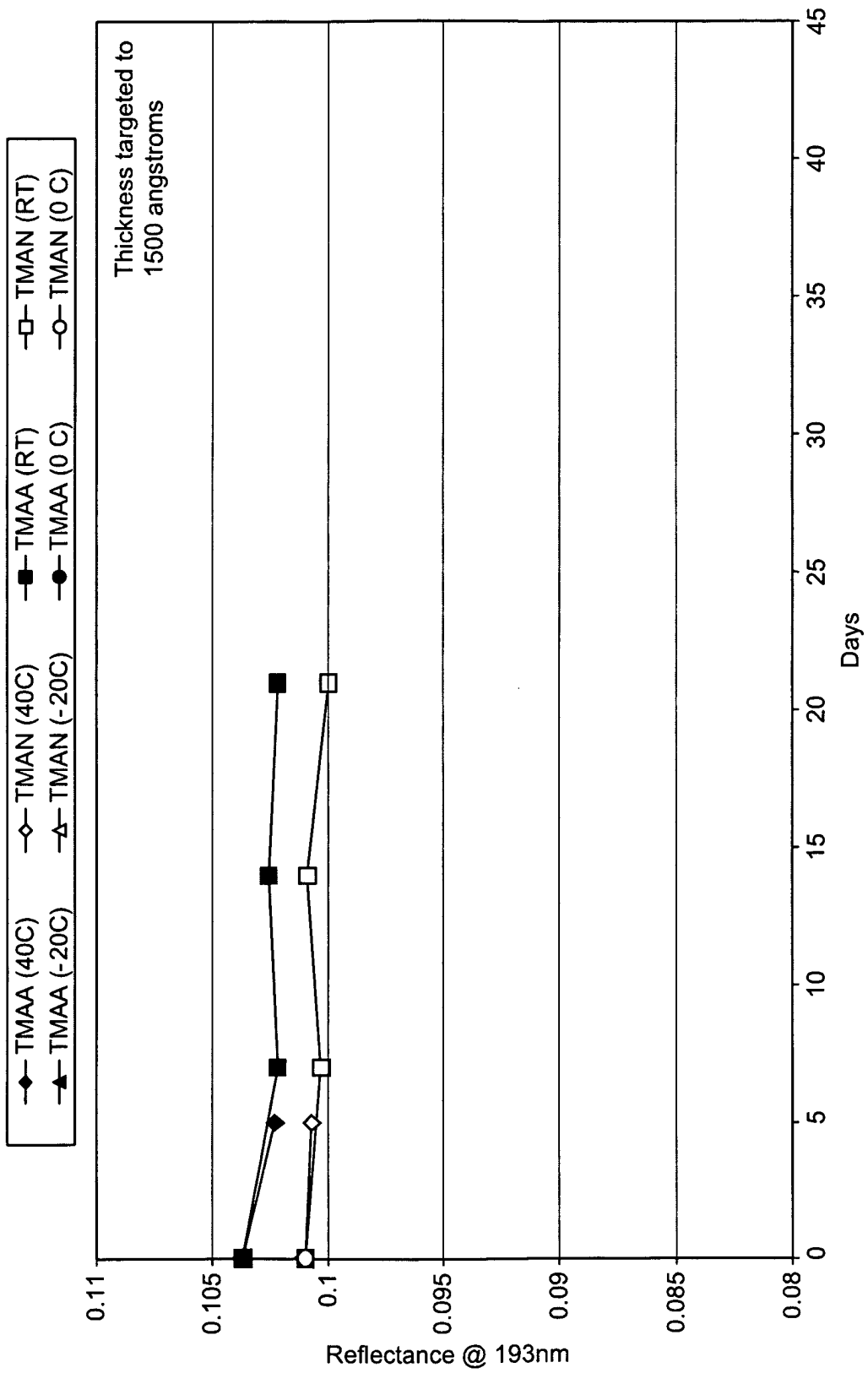


FIG. 20

193 Absorb. Composition Stabilized TMAA -vs- TMAN: Refractive Index @ 193nm -vs- Aging

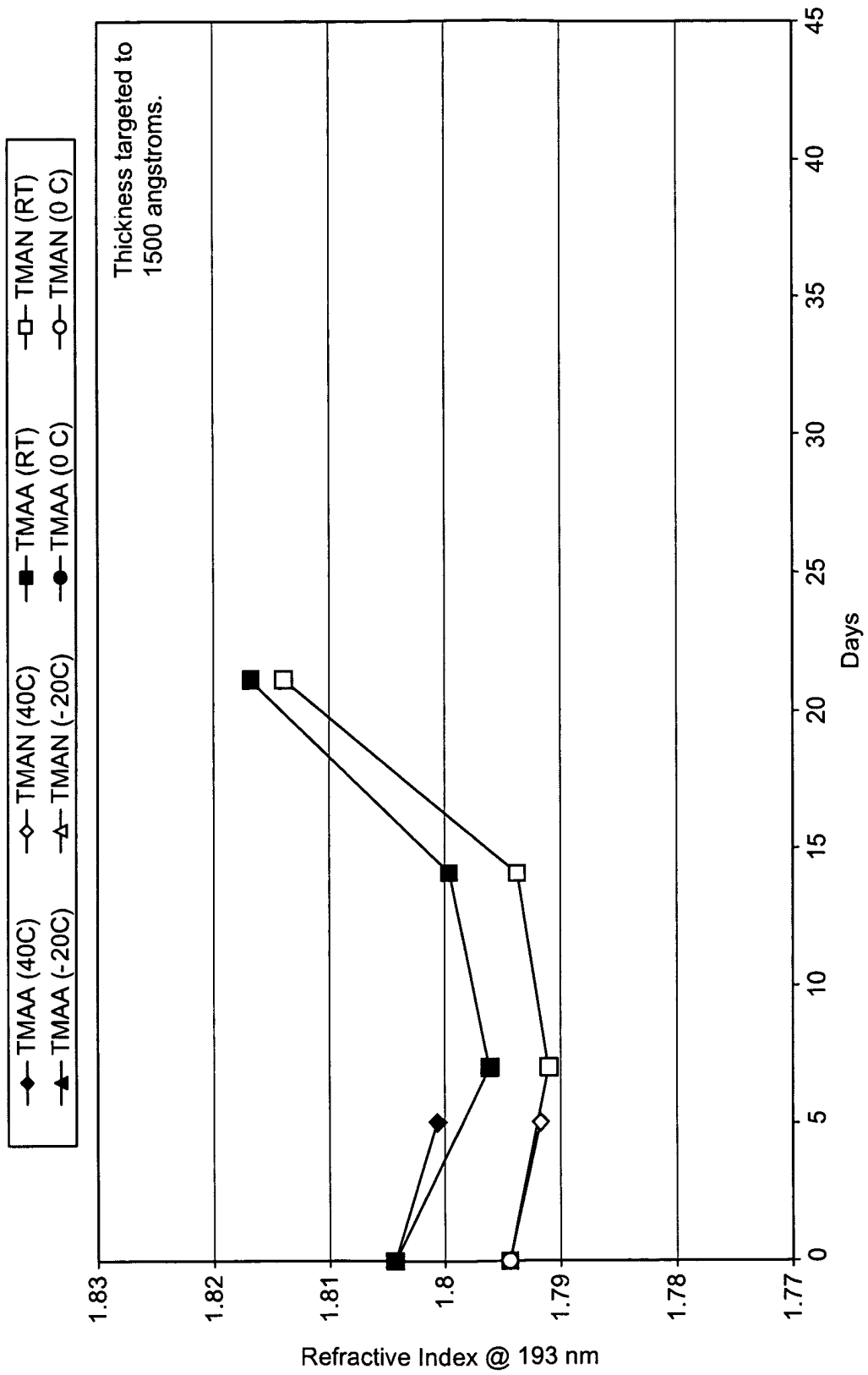


FIG. 21

193 Absorb. Composition Stabilized TMAA -vs- TMAN: Extinction Coefficient @ 193nm -vs- Aging

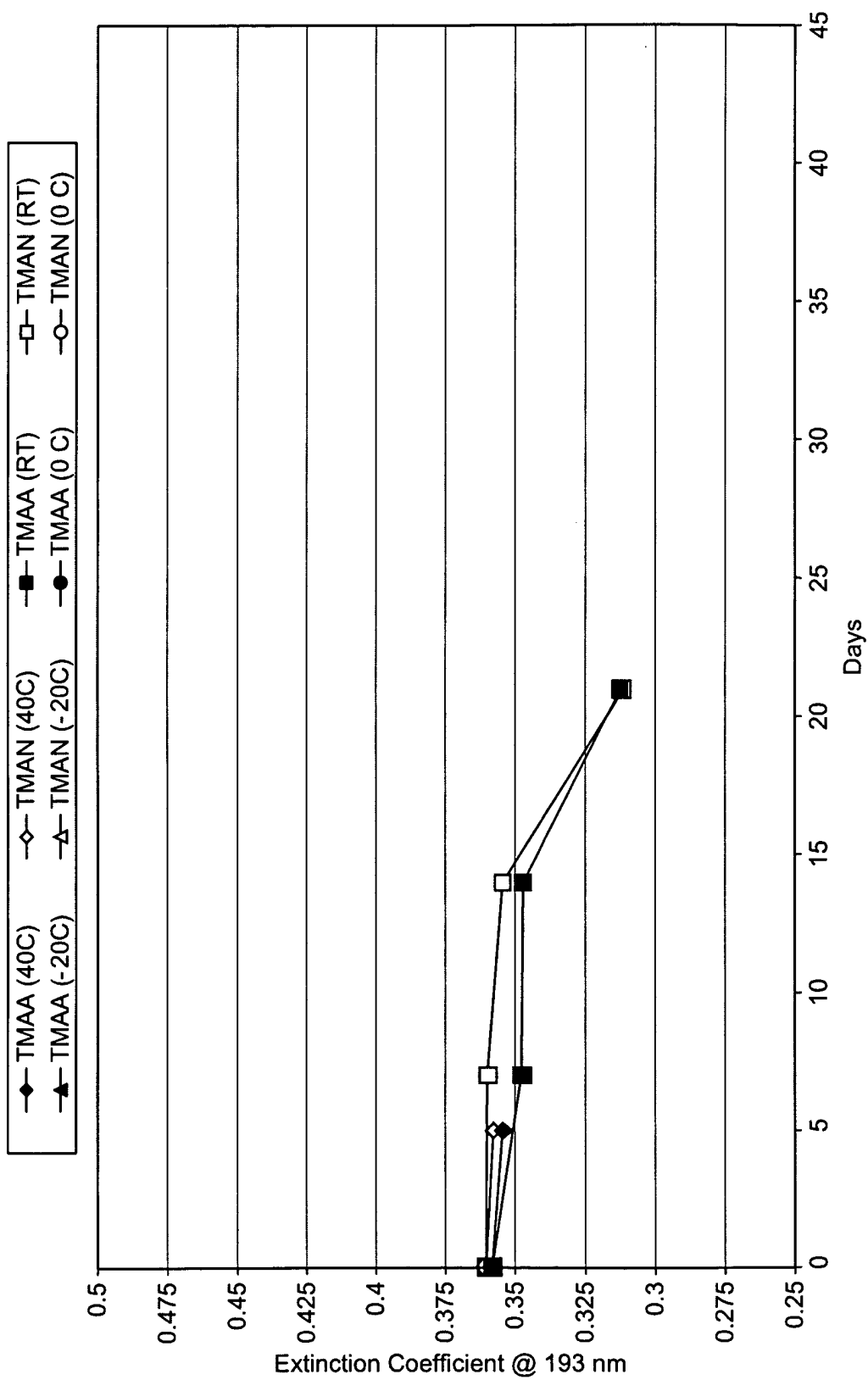


FIG. 22

193 Absorb. Composition Stabilized TMAA -vs- TMAN: Water Contact Angle -vs- Aging

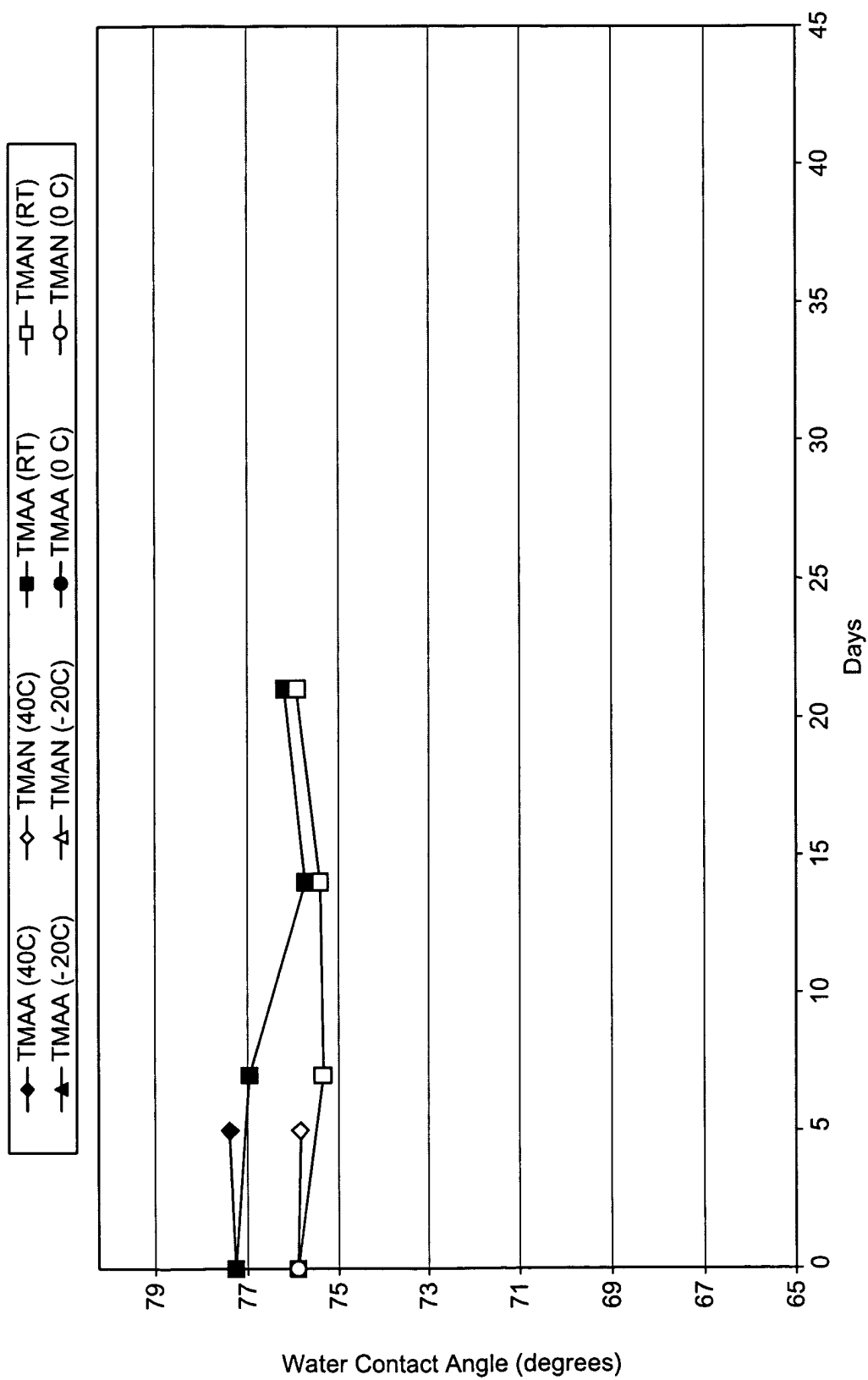


FIG. 23

¹⁹³ Absorb. Composition Stabilized TMAA -vs- TMAN: Ethylene Glycol Contact Angle -vs- Aging

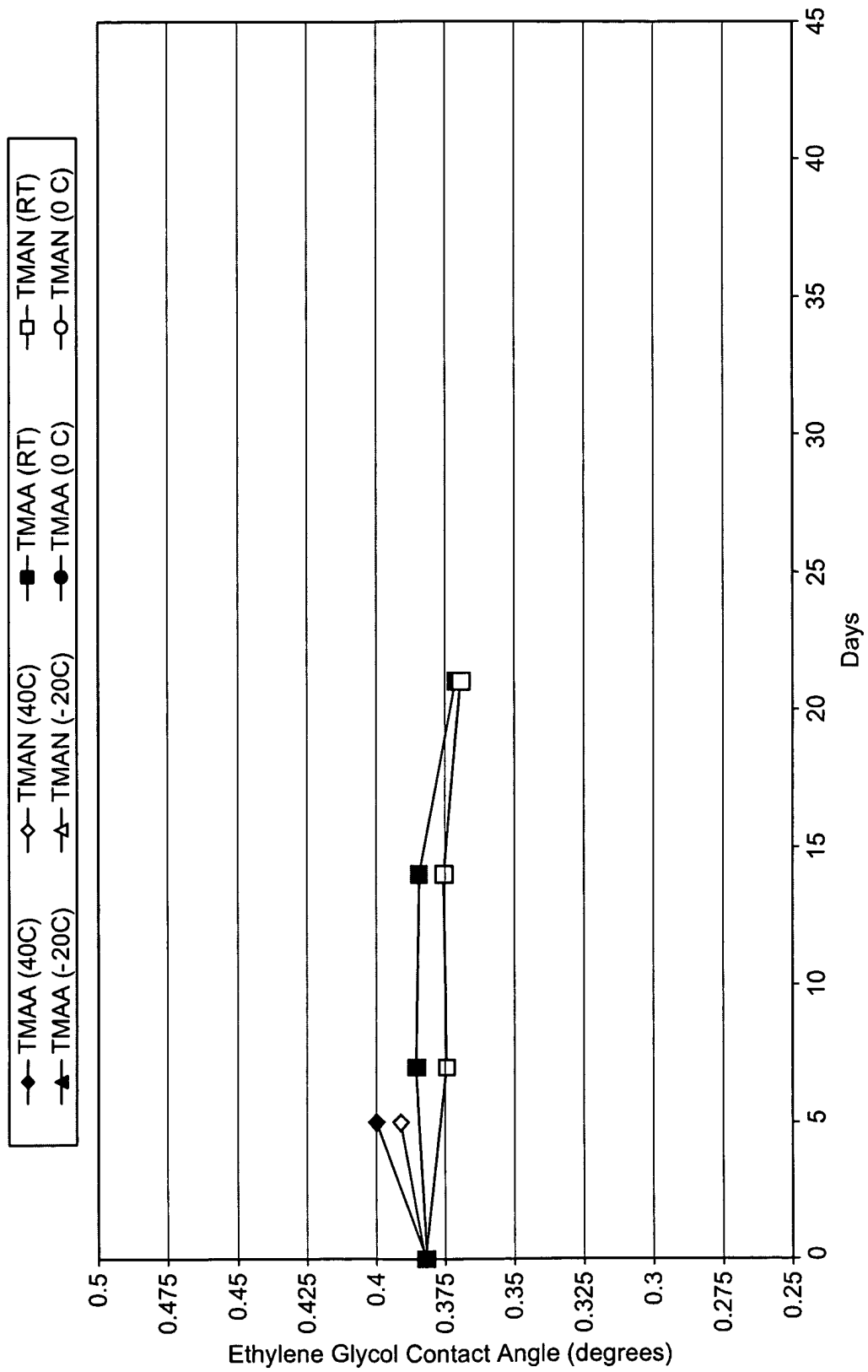


FIG. 24

193 Absorb. Composition Stabilized TMAA -vs- TMAN: TMAH Resistance -vs- Aging

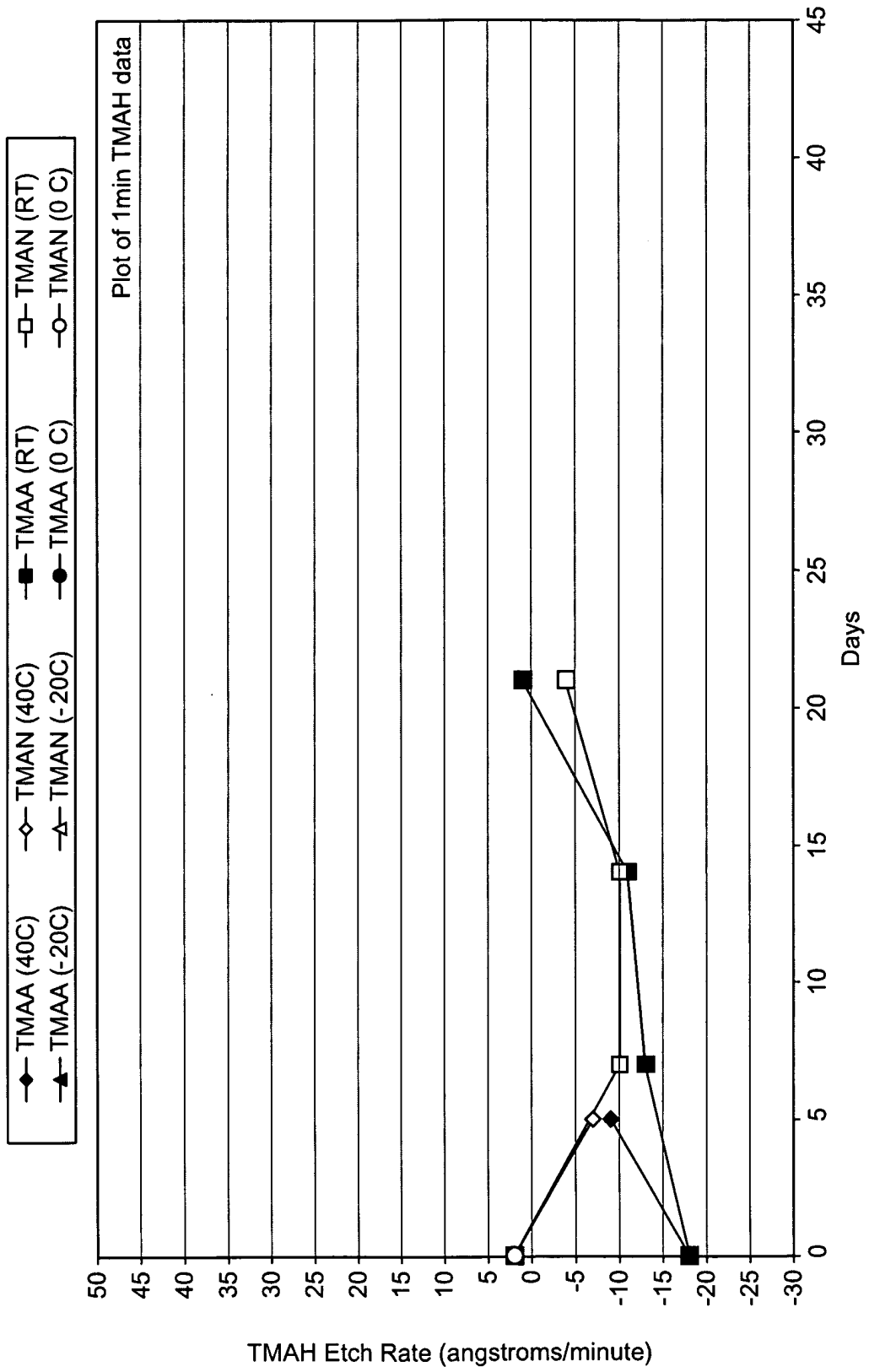


FIG. 25

193 Absorb. Composition Stabilized TMAA -vs- TMAN: 500:1 BOE strip rate -vs- Aging

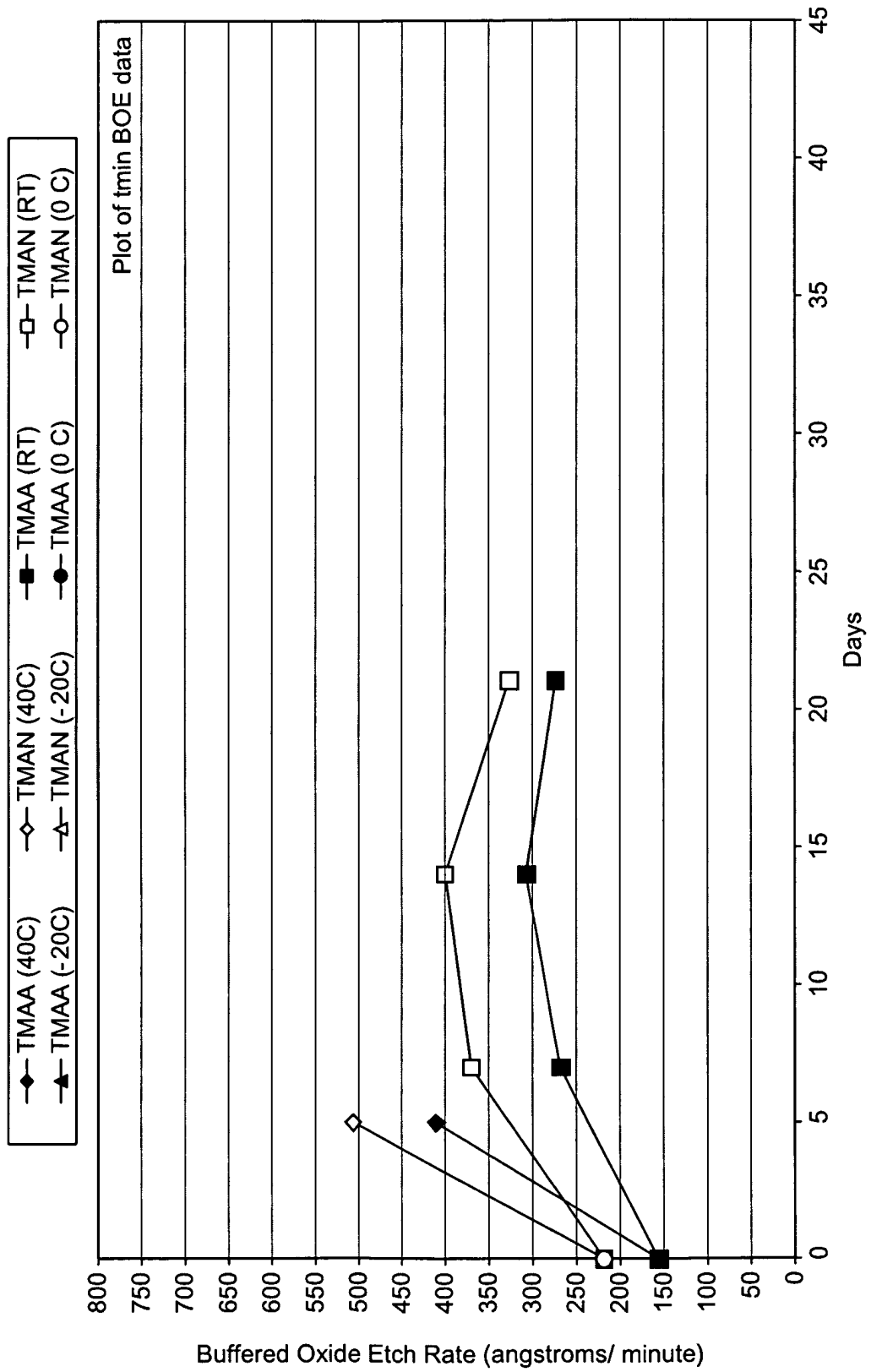


FIG. 26

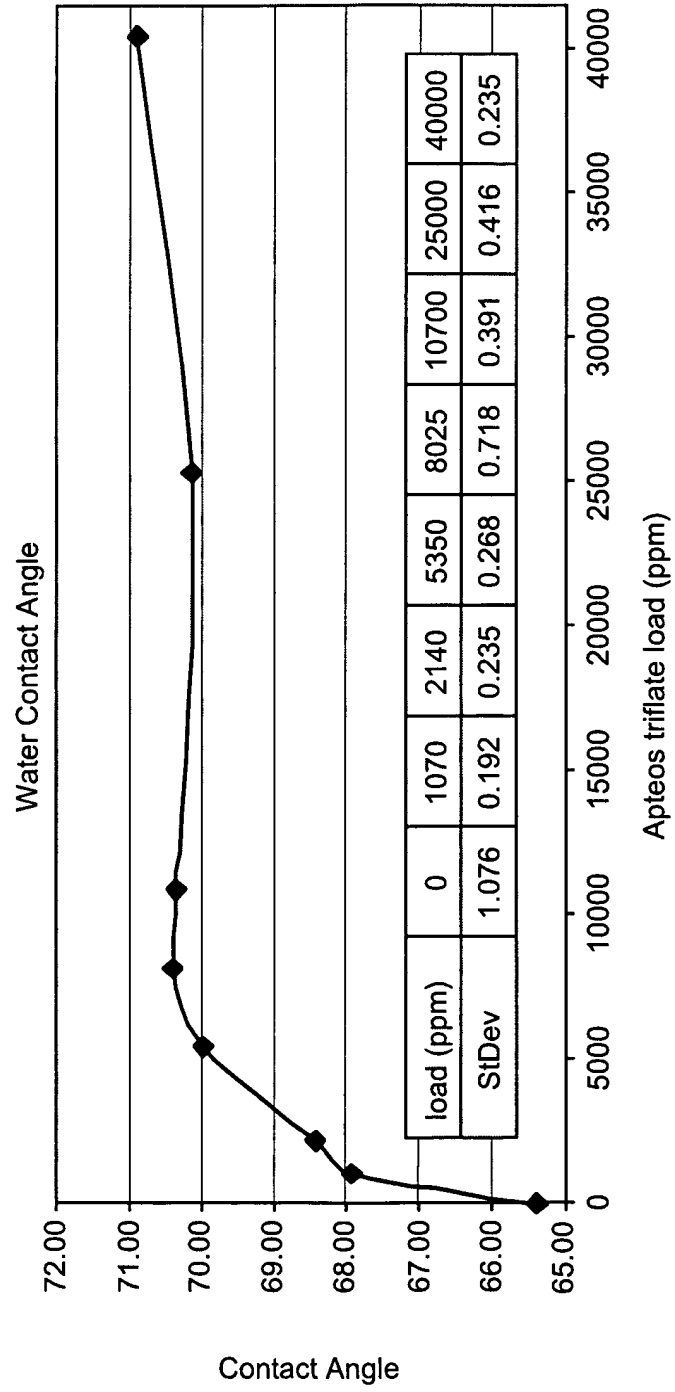


FIG. 27

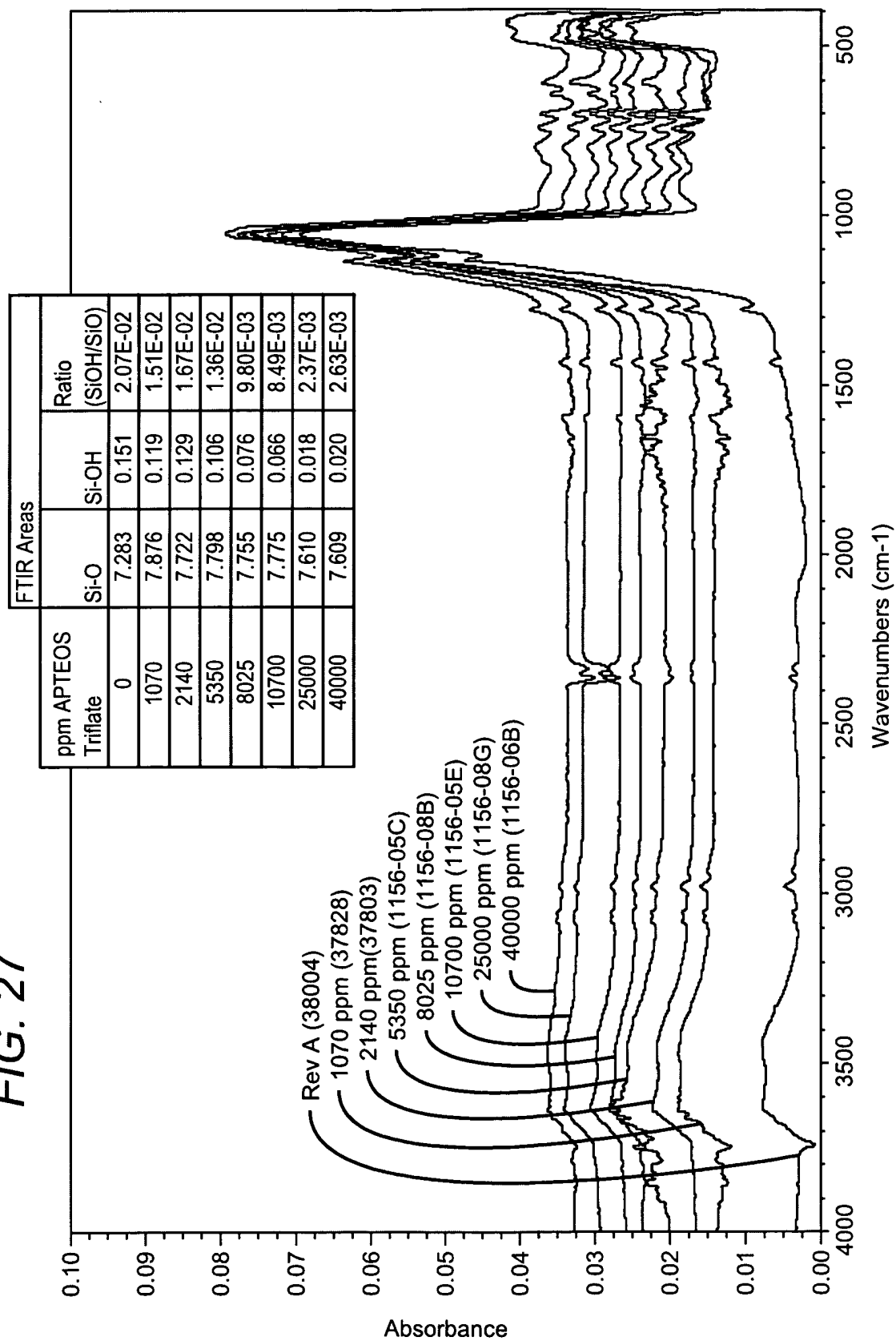


Table 3

Description	248	193	193	193	193	193	193	193	193	193	193	193	193	193	193	193	
	Absorbing Comp.	Absorbing Comp. POR	Absorbing Comp. Rev A	Absorbing Comp. Rev C	Absorbing Comp. Rev C	Absorbing Comp. Rev C	Absorbing Comp. Rev C (no acetone) + 5% DPG	Absorbing Comp. Rev C	Absorbing Comp. Rev C	Absorbing Comp. + 383ppm TMAH triflate	Absorbing Comp. + 383ppm TMAH triflate	Absorbing Comp. + 383ppm TMAH triflate	Absorbing Comp. + 1070ppm APTEOS triflate	Absorbing Comp. + 383ppm TMAH triflate	Absorbing Comp. + 383ppm TMAH triflate	Absorbing Comp. + 383ppm TMAH triflate	
	130/200°C	150/250°C	130/200°C	130/200°C	130/200°C	130/240°C	130/200°C	130/200°C	130/200°C	130/200°C	130/240°C	130/240°C	130/240°C	130/240°C	130/240°C	130/240°C	
Bake Sequence		50 sec each			90 sec each												
500:1BOE @21° C	30 sec	1224															
	1 min	1000		560													
	2 min	[880]															
TMAH	1 min @	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	
2.3% aq. TMAH	23° C	3529	50	2731	5	2694	57	2691	-12	2695	-7	2312	-12	2670	22	2676	8
	50° C	3534	429	2715	2	2663	100	2686	-19	2701	0	2331	6	2693	11	2663	-5
	75° C	3596	1795	2720	117	2702	781	2720	36	2672	13	2323	71	2694	88	2677	71
5.0% aq. TMAH	23° C	3526	[398]	2705	-13	2679	43	2739	-1	2693	-15	2311	-8	2702	28	2716	14
	50° C	3487	2102	2774	3	2723	298	2702	-10	2672	-28	2327	-11	2688	40	2673	26
	75° C	3530	>3530	2709	226	2699	1212	2709	53	2725	21	2361	120	2686	211	2673	130
10.0% aq. TMAH	23° C	3497	>3497	2670	-2	2687	166	2702	-18	2670	-31	2318	-8	2691	26	2672	9
	50° C	3525	>3525	2670	78	2670	716	2693	-12	2679	40	2327	11	2693	156	2666	91
	75° C	3519	>3519	2670	557	2706	>2706	2709	102	2688	364	2316	275	2731	410	2653	285

Table 4

Description	248 Absorbing Comp.		193 Absorbing Comp. Rev C		193 Absorbing Comp. +1070ppm APTEOS triflate		193 Absorbing Comp. +1070ppm APTEOS triflate		193 Absorbing Comp. +1070ppm APTEOS triflate		193 Absorbing Comp. +1070ppm APTEOS triflate + 1.5% DPG	
	N/A		<1		<1		<1		<1		<1	
pH	130/200°C		130/160°C		130/200°C		130/240°C		130/200°C		130/200°C	
	50 sec				90s							
Bake Sequence	1 min @		Pre		Pre		Pre		Pre		Pre	
	20° C		ER		ER		ER		ER		ER	
500:1 BOE	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
2.3% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
5.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH	1 min @		Pre		Pre		Pre		Pre		Pre	
	23° C		ER		ER		ER		ER		ER	
	50° C		Pre		Pre		Pre		Pre		Pre	
10.0% aq. TMAH												

Table 5

Description	193		193		193		193		193		193		193	
	Absorbing Comp.	+1070ppm APTEOS triflate + 1.5% DPG	Absorbing Comp.	+1070ppm APTEOS triflate + 3% DPG	Absorbing Comp.	+1070ppm APTEOS triflate + 3% DPG	Absorbing Comp.	+170ppm Ammonium triflate	Absorbing Comp.	+170ppm Ammonium triflate + 3% DPG	Absorbing Comp.	+170ppm Ammonium triflate + 3% DPG	Absorbing Comp.	+170ppm Ammonium triflate + 3% DPG
pH	<1		<1		<1		<1		<1		<1		<1	
Bake Sequence		130/240°C	130/200°C	130/240°C	130/200°C	130/240°C	130/200°C	130/200°C	130/200°C	130/200°C	130/200°C	130/240°C	130/240°C	130/240°C
90s														
500:1 BOE	1 min @	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	ER
	20° C	3214	[1432]	3507	[1176]	3548	[1065]	2751	[1113]	2971	[1514]	2982	[1459]	
2.3% aq. TMAH	1 min @	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	ER
	23° C	3218	123	3523	83	3564	29	2732	19	2951	38	2972	30	
	50° C	3184	1163	3510	>3510	3529	>3529	2746	76	2997	655	2960	421	
5.0% aq. TMAH	75° C	3203	>3202	3505	>3505	3519	>3519	2736	325	2977	>2977	2992	>2854	
	23° C	3194	102	3533	[1125]	3519	[482]	2744	33	2972	223	2952	54	
	50° C	3175	>3175	3505	>3505	3479	>3479	2725	254	2983	[2060]	2943	1407	
10.0% aq. TMAH	75° C	3165	>3165	3495	>3495	3487	>3487	2750	558	2973	>2973	2953	>2953	
	23° C	3200	[592]	3563	[3203]	3496	1748	2702	124	2979	1014	2949	455	
	50° C	3176	>3176	3504	>3504	3496	>3496	2761	619	2983	>2983	2949	>2949	
	75° C	3187	>3187	3534	>3534	3500	>3477	2766	991	2986	>2986	2992	>2992	

Table 6

Description	248	193	193	193	193	193	193	193
	Absorbing Comp.	Absorbing Comp. +1070ppm APTEOS triflate + 0.5% DPG	Absorbing Comp. +1070ppm APTEOS triflate + 1.5% DPG	Absorbing Comp. +1070ppm "optimized" APTEOS triflate	Absorbing Comp. +1070ppm "optimized" APTEOS triflate + 0.25% DPG	Absorbing Comp. +1070ppm "optimized" APTEOS triflate + 0.5% DPG	Absorbing Comp. +1070ppm "optimized" APTEOS triflate + 1% DPG	Absorbing Comp. +1070ppm "optimized" APTEOS triflate + 1.5% DPG
pH	N/A	<1	<1	<2	<2	<2	<2	<2
Bake Sequence	130/200°C	130/200°C	130/200°C	130/200°C	130/200°C	130/200°C	130/200°C	130/200°C
	50 sec	90 sec	90 sec	90 sec	90 sec	90 sec	90 sec	90 sec
500:1 BOE	1 min @ 20° C	Pre 3487	ER [977]	Pre 2869	ER [1409]	Pre 3177	ER [1601]	Pre 2879
		ER [977]	Pre 2869	ER [1409]	Pre 3177	ER [1601]	Pre 2879	ER [1512]
2.3% aq. TMAH	1 min @ 23° C	Pre 3492	ER 127	Pre 2874	ER 18	Pre 3190	ER 16	Pre 2854
		ER 127	Pre 2874	ER 18	Pre 3190	ER 16	Pre 2854	ER 28
	50° C	Pre 3463	ER 723	Pre 2886	ER 94	Pre 3190	ER 1806	Pre 2893
		ER 723	Pre 2886	ER 94	Pre 3190	ER 1806	Pre 2893	ER 279
5.0% aq. TMAH	1 min @ 75° C	Pre 3494	ER 1987	Pre 2875	ER 861	Pre 3203	ER >3203	Pre 2864
		ER 1987	Pre 2875	ER 861	Pre 3203	ER >3203	Pre 2864	ER [1519]
	23° C	Pre 3496	ER [812]	Pre 2893	ER 17	Pre 3182	ER 93	Pre 2853
		ER [812]	Pre 2893	ER 17	Pre 3182	ER 93	Pre 2853	ER 55
10.0% aq. TMAH	50° C	Pre 3520	ER >3520	Pre 2857	ER 356	Pre 3189	ER >3189	Pre 2844
		ER >3520	Pre 2857	ER 356	Pre 3189	ER >3189	Pre 2844	ER 739
	75° C	Pre 3506	ER >3506	Pre 2858	ER [1660]	Pre 3184	ER >3184	Pre 2850
		ER [1660]	Pre 2858	ER 356	Pre 3184	ER >3184	Pre 2850	ER >2771
10.0% aq. TMAH	23° C	Pre 3499	ER >3499	Pre 2877	ER 163	Pre 3187	ER 2803	Pre 2871
		ER >3499	Pre 2877	ER 163	Pre 3187	ER 2803	Pre 2871	ER 715
	50° C	Pre 3522	ER >3522	Pre 2848	ER 1196	Pre 3215	ER >3215	Pre 2899
		ER >3522	Pre 2848	ER 1196	Pre 3215	ER >3215	Pre 2899	ER >2899
10.0% aq. TMAH	75° C	Pre 3542	ER >3542	Pre 2851	ER >2851	Pre 3186	ER >3186	Pre 2885
		ER >3542	Pre 2851	ER >2851	Pre 3186	ER >3186	Pre 2885	ER >2885
	23° C	Pre 3499	ER >3499	Pre 2877	ER 163	Pre 3187	ER 2803	Pre 2871
		ER >3499	Pre 2877	ER 163	Pre 3187	ER 2803	Pre 2871	ER 715

Table 7

Description	193		193		193		193		193		193	
	Absorbing Comp.	+170ppm ammonium triflate	Absorbing Comp.	+170ppm ammonium triflate	Absorbing Comp.	+170ppm ammonium triflate	Absorbing Comp.	+383ppm TMAH - MSA	Absorbing Comp.	+383ppm TMAH - MSA	Absorbing Comp.	+1070ppm APTEOS - MSA
	<2		<2		<2		<2		<2		<2	
pH	130/200°C		130/200°C		130/200°C		130/200°C		130/200°C		130/200°C	
Bake Sequence	90 sec		90 sec		90 sec		90 sec		90 sec		90 sec	
	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER
500:1 BOE	20° C	2804	[1102]	2830	[1149]	2931	[1283]	2823	723	2816	895	2768
2.3% aq. TMAH	1 min @	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre
	23° C	2786	23	2821	[1149]	2924	54	2812	40	2828	40	2777
	50° C	2827	86	2835	120	2891	201	2769	12	2810	18	2765
	75° C	2762	415	2854	678	2897	1132	2755	123	2848	293	2794
5.0% aq. TMAH	23° C	2777	29	2841	27	2883	40	2773	11	2811	23	2821
	50° C	2785	206	2871	278	2903	464	2797	22	2852	34	2763
	75° C	2809	586	2843	278	2937	1827	2779	167	2824	457	2804
10.0% aq. TMAH	23° C	2785	102	2840	138	2885	223	2770	10	2827	29	2806
	50° C	2782	605	2818	775	2914	1533	2843	81	2790	840	2792
	75° C	2781	1100	2846	[1696]	2878	[2878]	2799	441	2793	849	2777

Table 8

Description	193		193		193		193		193		193		193	
	Absorbing Comp.	+2140ppm	"optimized"	APTEOS	triflate +	0.16% DPG	Absorbing Comp.	+170ppm	"optimized"	Ammonium triflate +	0.75% DPG	Absorbing Comp.	+225ppm	"optimized"
pH	<2						<2					<2		
Bake Sequence	130/200°C		130/200°C		130/200°C		130/200°C		130/200°C		130/200°C		130/200°C	
	90 sec		90 sec		90 sec		90 sec		90 sec		90 sec		90 sec	
500:1 BOE	1 min @	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre
	20°C	2970	[1527]	2970	[1486]	2933	[1313]	2696	[1130]	2902	[1272]	2938	[1314]	2970 [1396]
2.3% aq. TMAH	1 min @	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre
	23°C	2995	78	2962	76	2905	70	2913	64	2920	77	2935	88	2949
	50°C	2965	248	2947	195	2929	171	2929	211	2908	167	2932	220	2951
5.0% aq. TMAH	75°C	2970	[1608]	2946	1166	2914	1035	2959	1341	2941	1077	2962	1369	2998
	23°C	2959	137	2932	103	2905	87	2924	90	2936	91	2929	133	2960
	50°C	2968	591	2942	462	2915	405	2914	486	2923	412	2980	567	2991
10.0% aq. TMAH	75°C	2943	[2608]	2983	1565	2948	1398	2932	[2138]	2945	[1664]	2940	[2166]	2974 >2974
	23°C	2982	186	2937	147	2915	99	2944	124	2919	124	2962	117	2989
	50°C	3012	1616	2950	1187	2934	1028	2978	1274	2909	1170	2908	1253	3008
	75°C	1966	>2966	2971	>2971	2879	[2878]	2923	2923	2932	>2932	2937	>2937	2972 >2972

Table 9


Description	248	193	193	193	193	193	193	193
	Absorbing Comp.	Absorbing Comp. +1070ppm	Absorbing Comp. +1070ppm	Absorbing Comp. +1070ppm	Absorbing Comp. +1070ppm	Absorbing Comp. +1070ppm	Absorbing Comp. +1070ppm	Absorbing Comp. +1070ppm
pH	<2	<2	<2	<2	<2	<2	<2	<2
	130/200°C	130/200°C	130/200°C	130/200°C	130/200°C	130/200°C	130/200°C	130/200°C
	50 sec	90 sec	90 sec	90 sec	90 sec	90 sec	90 sec	90 sec
	1 min @ 20°C	Pre 3565 [1013]; 2887	ER [1354]	Pre 2900 [1356]	ER [1467]	Pre 2942 [1450]; 2884	ER [1351]	Pre 2910 [1450]
2.3% aq. TMAH	1 min @ 23°C	Pre 3544 134; 2866	ER 72	Pre 2885 73	ER 72	Pre 2921 72	ER 79	Pre 2909 77
	50°C	3561 803; 2858	105	2894 142	2952 175	2952 166	2984 249	2960 266
	75°C	3598 [2559]; 2902	622	2925 833	1191 2982	1506 2885	893 2925	1089 2987
	23°C	3559 >3530; 2861	81	2901 101	2930 91	2941 100	2875 79	2904 85
5.0% aq. TMAH	50°C	3539 >3539; 2848	256	2874 339	2902 456	2970 588	2917 410	2931 487
	75°C	3565 >3563; 2893	789	2912 1124	1612 2927	[2504]; 2907	1198 2952	[1672] 2981
	23°C	3563 >2563; 2850	93	2892 132	2917 156	2956 226	2865 115	2947 158
10.0% aq. TMAH	50°C	3580 >3580; 2892	704	2870 851	2936 1211	2977 1548	2894 934	2918 1186
	75°C	3545 >3545; 2893	[1493]	2886 [2142]	2914 [2914]	2939 >2939; 2879	[2267] 2967	>2960 2960

Table 10

Descriptions	193				
	248 Absorbing Comp.	Absorbing Comp. + 1070ppm APTEOS tosylate	Absorbing Comp. + 1070ppm APTEOS tosylate	Absorbing Comp. + 1070ppm APTEOS tosylate + 5% DPG	Absorbing Comp. + 1070ppm APTEOS tosylate + 5% DPG
pH	1.5	<1	<1	<1	<1
Bake temp. (C)/Time (Sec.)	150/250C -- 50sec	130/200C -- 90sec	130/240C -- 90sec	130/200C -- 90sec	130/240C -- 90sec
Metrics	ER (A/min)	ER (A/min)	ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min	210	12	10	53
	2 min	167	12	4	42
500:1BOE @ 21°C	30 sec	1224	1440	[880]	[2405]
	1 min	1000	>1215	845	>1309
	2 min	[880]	>673	>689	>656
					>652

ER: Etch Rate (A/min);

Pre: Pre-Immersion SOG Film Average Thickness in Angstrom;

 ER > 1000A/min ER < 1000A/min

> Bare Si post-etch

[] Post-etch film is highly non-uniformed.

Table 11

Descriptions		248 Absorbing Comp.	193 Absorbing Comp. Rev A + 383ppm TMAH triflate	193 Absorbing Comp. Rev A + 383ppm TMAH tosylate
pH		N/A	<1	<1
Bake temp. (C)/Time (Sec.)		130/200C -- 50sec	130/240C -- 90sec	130/240C -- 90sec
Metrics		ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min	210	11	16
	2 min	167	4	8
500:1BOE @ 21°C	30 sec	1224	969	689
	1 min	1000	844	647
	2 min	880	854	665

ER: Etch Rate (A/min);

Pre: Pre-Immersion SOG Film Average Thickness in Angstrom;

ER > 1000A/min

ER < 1000A/min

> Bare Si post-etch

[] Post-etch film is highly non-uniformed.

Table 12

	"N" wt / Si comp. Wt (ppm)	"N" mole / Si comp. Wt (ppm)	"N" mole / Si comp. Wt (ppm) (consider 95% TMAA and 96% TMAN)
AS_TMAA	589	4.422	4.201
TMAN	601.2	4.416	4.239

Table 13

		193 Absorbing Composition + TMAA					
Bake temp. (C)/Time (Sec.)		130/150C -- 90sec	130/175C -- 90sec	130/200C -- 90sec	130/225C -- 90sec	130/250C -- 90sec	
Metrics		ER (A/min)	ER (A/min)	ER (A/min)	ER (A/min)	ER (A/min)	
2.5% TMAH @ 21°C	1 min	-1	5	-7	-2	-3	
PGMEA @ 21°C	6 min	0.4	-0.6	-0.4	-0.2	-0.9	
500:1BOE @ 21°C	30 sec	358	251	206	165	144	
	1 min	331	273	215	191	176	

		193 Absorbing Composition + TMAN						248 Absorb. Comp.
Bake temp. (C)/Time (Sec.)		150/150C -- 50sec	130/175C -- 90sec	130/200C -- 90sec	130/225C -- 90sec	130/250C -- 90sec	130/200C -- 60sec	
Metrics		ER (A/min)	ER (A/min)	ER (A/min)	ER (A/min)	ER (A/min)	ER (A/min)	
2.5% TMAH @ 21°C	1 min	1	-3	-1	1	3	882	
PGMEA @ 21°C	6 min	-0.7	-0.2	-0.7	0.1	-0.1	21	
500:1BOE @ 21°C	30 sec	574	403	261	238	186	1140	
	1 min	552	413	312	244	198	983	

Spin Coated @7 PM on 5/22/03; Wet Process

Table 14

Descriptions		193 Absorbing Comp. + 600ppm TMAN	193 Absorbing Comp. + 600ppm Stabilized TMAA	248 Absorbing Comp.
pH		1.7	0.5	N/A
Bake temp. (C)/Time (Sec)		130/240C -- 90sec	130/240C -- 90sec	130/200C -- 50sec
DIWater Contact Angle		78.7	78.9	74.9
Metrics		ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min	-7	-9	45
	2 min	-8	-10	47
500:1BOE @ 21°C	30 sec	263	277	785
	1 min	506	410	937
	2 min	413	366	720
DIWater Contact Angle		77.5	78	74.2
Metrics		ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min	-10	-13	12
	2 min	-8	-1	30
500:1BOE @ 21°C	30 sec	230	174	715
	1 min	370	268	796
	2 min	370	230	670
DIWater Contact Angle		79.2	77.2	72
Metrics		ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min	-10	-11	24
	2 min	-9	-7	40
500:1BOE @ 21°C	30 sec	223	215	931
	1 min	400	307	964
	2 min	405	313	[720]
DIWater Contact Angle		77.5	78.3	70
Metrics		ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min	-4	1	96
	2 min	-6	-1	96
500:1BOE @ 21°C	30 sec	266	256	935
	1 min	326	274	912
	2 min	[351]	[319]	[722]

Table 15

Descriptions		248 Absorbing Comp.	193 Absorbing Comp. + 600ppm Stabilized TMAA	193 Absorbing Comp. + 600ppm TMAN
Bake temp. (C)		130/200C	130/240C	130/240C
DIWater Contact Angle				
Metrics		ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min	67	-3	-5
	2 min	62	-2	-6
500:1BOE @ 21°C	30 sec	815	158	219
	1 min	688	171	252
	2 min	621	173	312
NE - 14 @ 21°C	30 sec	2833		
	1 min	>2815		
DIWater Contact Angle				
Metrics		ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min	31	-2	-6
	2 min	49	-2	-4
500:1BOE @ 21°C	30 sec	230	154	195
	1 min	753	181	303
	2 min	[605]	188	320
NE - 14 @ 21°C	30 sec	2636		
	1 min	>2710		
DIWater Contact Angle				
Metrics		ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min	74	-8	2
	2 min	80	-2	1
500:1BOE @ 21°C	30 sec	839	165	234
	1 min	742	188	282
	2 min	655	188	315
NE - 14 @ 21°C	30 sec	3040		
	1 min	>2792		

Table 16

Descriptions		248 Absorbing Comp.	193 Absorbing Comp. + 600ppm Stabilized TMAA	193 Absorbing Comp. +600ppm TMAA
Bake temp. (C)		130/200C	130/240C	130/240C
DI Water Contact Angle				
Metrics		ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min	53	-2	-1
	2 min	56	1	-6
500:1BOE @ 21°C	30 sec	700	173	184
	1 min	688	156	253
	2 min	601	168	286
NE - 14 @ 21°C	30 sec	1732		
	1 min	>2825		

Table 17

Description	248 Absorbing Comp. 248.2100.200 mm	193 Absorbing Comp. Rev A	193 Absorbing Comp. +1070ppm "optimized" APTEOS triflate	193 Absorbing Comp. +1070ppm "optimized" APTEOS triflate	193 Absorbing Comp. +1070ppm "optimized" APTEOS triflate	193 Absorbing Comp. +1070ppm "optimized" APTEOS triflate	193 Absorbing Comp. +1070ppm "optimized" APTEOS triflate	193 Absorbing Comp. +1070ppm "optimized" APTEOS triflate	193 Absorbing Comp. +1070ppm "optimized" APTEOS triflate
	pH	1.5	<2	<2	<2	<2	<2	<2	<2
Bake Sequence	130/200°C	130/200°C	130/180°C	130/200°C	130/200°C	130/220°C	130/240°C	130/250°C	130/280°C
	50 sec	90 sec	90 sec	90 sec					
500:1 BOE	ER	ER	ER	ER	ER	ER	ER	ER	ER
	748	[1568]	[1405]	[1354]	1311	[1111]	912	884	[850]
TMAH	1 min @								
	23° C	57	82	72	31	36	-1	2	27
2.3% aq. TMAH	50° C	100	144	105	90	45	-8	19	4
	75° C	781	797	622	446	372	228	179	129
5.0% aq. TMAH	23° C	43	37	81	1	21	-15	20	0
	50° C	298	347	256	222	123	47	38	46
	75° C	1212	1261	789	782	624	406	321	211
10.0% aq. TMAH	23° C	166	196	93	60	52	12	26	14
	50° C	716	766	704	485	294	205	115	41
	75° C	>2706	[1981]	[1493]	1282	900	745	462	332

Table 18

Description	248 Absorbing Comp. 248.2100.200 mm	193 Absorbing Comp. Rev A +1070ppm "optimized" APTEOS triflate + 1.5% DPG	193 Absorbing Comp. Rev A +1070ppm "optimized" APTEOS triflate + 1.5% DPG	193 Absorbing Comp. Rev A +1070ppm "optimized" APTEOS triflate + 1.5% DPG	193 Absorbing Comp. Rev A +1070ppm "optimized" APTEOS triflate + 1.5% DPG	193 Absorbing Comp. Rev A +1070ppm "optimized" APTEOS triflate + 1.5% DPG
pH	N/A	<2	<2	<2	<2	<2
Bake Sequence	130/200°C 50 sec	130/180°C	130/200°C	130/220°C	130/240°C	130/260°C
500:1 BOE	1 min @ 20° C	ER [846]	ER [1608]	ER [1439]	ER [1282]	ER [1113]
TMAH	1 min @					
2.3% aq. TMAH	23° C	78	74	75	18	42
	50° C	393	386	146	123	10
	75° C	1988	2567	1483	1090	590
5.0% aq. TMAH	23° C	818	110	54	27	73
	50° C	>3509	959	400	275	98
	75° C	>3484	>2862	>2867	1366	900
10.0% aq. TMAH	23° C	>3486	503	105	75	31
	50° C	>3509	959	400	275	98
	75° C	>3474	>2804	>2819	>2821	1616
						1283

Table 19

Description	248 Absorbing Comp. 248.2100.200 mm		193 Absorbing Comp. Rev A		193 Absorbing Comp. +1070ppm "optimized" APTEOS MSA + 1.5% DPG		193 Absorbing Comp. +1070ppm "optimized" APTEOS MSA + 1.5% DPG		193 Absorbing Comp. +1070ppm "optimized" APTEOS MSA + 1.5% DPG		193 Absorbing Comp. +1070ppm "optimized" APTEOS MSA + 1.5% DPG	
	N/A		1.5		<2		<2		<2		<2	
pH	130/200°C		130/200°C		130/180°C		130/200°C		130/220°C		130/240°C	
	50 sec		90 sec		90 sec		90 sec		90 sec		90 sec	
Bake Sequence	1 min @ 20° C	ER	ER	ER	ER	ER	ER	ER	ER	ER	ER	ER
		748	[1568]	[1385]		1086	852	801		800	755	
500:1 BOE TMAH	1 min @ 23° C 50° C 75° C											
		76	57	54	26		12	-5		21	-3	
		780	100	131	48		36	-35		20	-7	
2.3% aq. TMAH	1 min @ 23° C 50° C 75° C	1931	781	1129	507		518	201		242	226	
5.0% aq. TMAH	1 min @ 23° C 50° C 75° C	no data	43	46	23		4	-24		13	17	
		>3522	298	444	115		78	-15		28	10	
		>3566	1212	>2889	695		686	372		466	383	
10.0% aq. TMAH	1 min @ 23° C 50° C 75° C											
		>3511	166	94	26		32	-6		-6	12	
		>3536	716	906	387		168	58		82	-19	
		>3571	>2706	>2831	[1515]		1172	746		970	513	

Table 20

Materials	pH	Days at 40C	Mn	Mw	Mp	Mz	Mz+1	PDI
193 Absorb. Comp. Rev A + 1070ppm "opt" apteos triflate	1.732	0	780	1109	735	1488	1844	1.422
		5	1062	1568	1329	2188	2853	1.476
193 Absorb. Comp. Rev A + 1070ppm "opt" apteos triflate +1.5% DPG	<2	0	891	1269	754	1722	2179	1.424
		7	1058	1486	1198	1995	2520	1.404
193 Absorb. Comp. Rev A + 1070ppm "opt" apteos msa +1.5% DPG	<2	0	880	1241	749	1680	2127	1.41
		7	1006	1410	1175	1887	2364	1.402
5 days at 40C 193AC	Mn	Mw	110 nm via fill					
pH1.5 + 2000ppm nitric acid acidified TMAA	1289	1641	No voiding					

Table 21

Description	248 Absorbing Comp. 248.2100.200 mm	193 Absorbing Comp. Rev A	193 Absorbing Comp. pH 5.5	193 Absorbing Comp. Rev A + 1070ppm + APTEOS Nitrate	193 Absorbing Comp. Rev A + 1070ppm + APTEOS Nitrate + 1.5% DPG	193 Absorbing Comp. Rev A + 1070ppm + APTEOS Nitrate + 3% DPG	193 Absorbing Comp. Rev A + 1070ppm + APTEOS Nitrate + 6% DPG	193 Absorbing Comp. Rev A + 1070ppm + APTEOS Nitrate + 9% DPG
pH	N/A	1.5	5.5	<2	<2	<2	<2	<2
Bake Sequence	130/200°C	130/200°C	130/240°C	130/240°C	130/240°C	130/240°C	130/240°C	130/240°C
	50 sec N2	90 sec N2	60 sec N2	90 sec N2	90 sec N2	90 sec N2	90 sec N2	90 sec N2
500:1 BOE	1 min @ 20° C	ER	ER	ER	ER	ER	ER	ER
	675	[1568]	612	422	[545]	571	681	626
TMAH	1 min @	Pre	ER					
	23° C	2694	57	28	-7	40	56	62
2.3% aq. TMAH	50° C	2663	100	42	6	28	20	26
	75° C	2702	781	117	356	224	347	463
5.0% aq. TMAH	23° C	485	2	40	-5	32	13	10
	50° C	>3536	2723	20	18	17	21	13
	75° C	>3527	2699	119	508	259	524	776
10.0% aq. TMAH	23° C	>3461	2687	33	-2	20	36	14
	50° C	>3469	2670	41	81	106	50	80
	75° C	>3514	2706	219	1040	546	1075	1573

Table 22

Description	Thickness	1 dev	Reflectance @ 193nm	n @ 193nm	k @ 193nm
193 Rev A	1469	12.2	9.77	1.8027	0.3811
193 Rev A + 1070 ppm APTEOS Triflate	1502	15.4	10.26	1.8019	0.3469
193 Rev A + 2140 ppm APTEOS Triflate	1514	12.1	10.33	1.7945	0.3304
193 Rev A + 5350 ppm APTEOS Triflate	1509	15.4	10.18	1.7931	0.3362
193 Rev A + 8025 ppm APTEOS Triflate	1512	9.7	10.19	1.7918	0.3329
193 Rev A + 10700 ppm APTEOS Triflate	1506	12.7	10.15	1.7958	0.3427
193 Rev A + 25000 ppm APTEOS Triflate	1500	12.2	10.14	1.7998	0.3526
193 Rev A + 40000 ppm APTEOS Triflate	1533	10.5	10.16	1.7793	0.3276

Table 23

ppm APTEOS Triflate	40C Aging	Mn	Mw	Mp	Mz	Mz+1	Polydispersity
193 Rev A + 1070 ppm APTEOS Triflate	0	920	1283	759	1724	2173	1.395362
	5	1279	1681	1405	2174	2706	1.314284
193 Rev A + 2140 ppm APTEOS Triflate	0	754	1119	744	1562	2000	1.483957
	5	955	1378	788	1897	2455	1.442483
193 Rev A + 5350 ppm APTEOS Triflate	0	876	1226	754	1640	2046	1.3994
	5	984	1367	779	1819	2268	1.38917
193 Rev A + 8025 ppm APTEOS Triflate	0	877	1228	754	1646	2058	1.40051
	5	988	1369	1112	1812	2247	1.38518
193 Rev A + 10700 ppm APTEOS Triflate	0	875	1226	755	1642	2052	1.40143
	5	1001	1396	1156	1860	2320	1.3942
193 Rev A + 25000 ppm APTEOS Triflate	0	846	1204	764	1635	2060	1.42421
	5						
193 Rev A + 40000 ppm APTEOS Triflate	0	835	1169	755	1930	1930	1.39928
	5	846	1260	773	1726	2168	1.489298

Table 24

Description	248 Absorbing Comp. 248.2100.200 mm		193 Absorbing Comp. Rev A		193 Absorbing Comp. Rev A + 10,700ppm APTEOS triflate (10x)		193 Absorbing Comp. Rev A + 40,000ppm APTEOS triflate (37x)	
	pH	N/A	130/200°C 50 sec N2	130/200°C 90 sec N2	130/240°C 90 sec N2	130/240°C 90 sec N2	<2.5	<2.5
500:1 BOE TMAH	1 min @ 20° C	ER 751		ER [1568]	ER	ER	ER	ER
	1 min @							
	23° C	5357		57	22	45		
2.3% aq. TMAH	50° C	493		100	-8	95		
	75° C	1488		781	334	[2252]		
5.0% aq. TMAH	23° C	287		43	-25	-6		
	50° C	[1604]		298	69	809		
	75° C	[2639]		1212	309	2709		
10.0% aq. TMAH	23° C	>3491		166	-8	17		
	50° C	>3427		716	162	878		
	75° C	>3443		>2706	1440	>2912		